This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

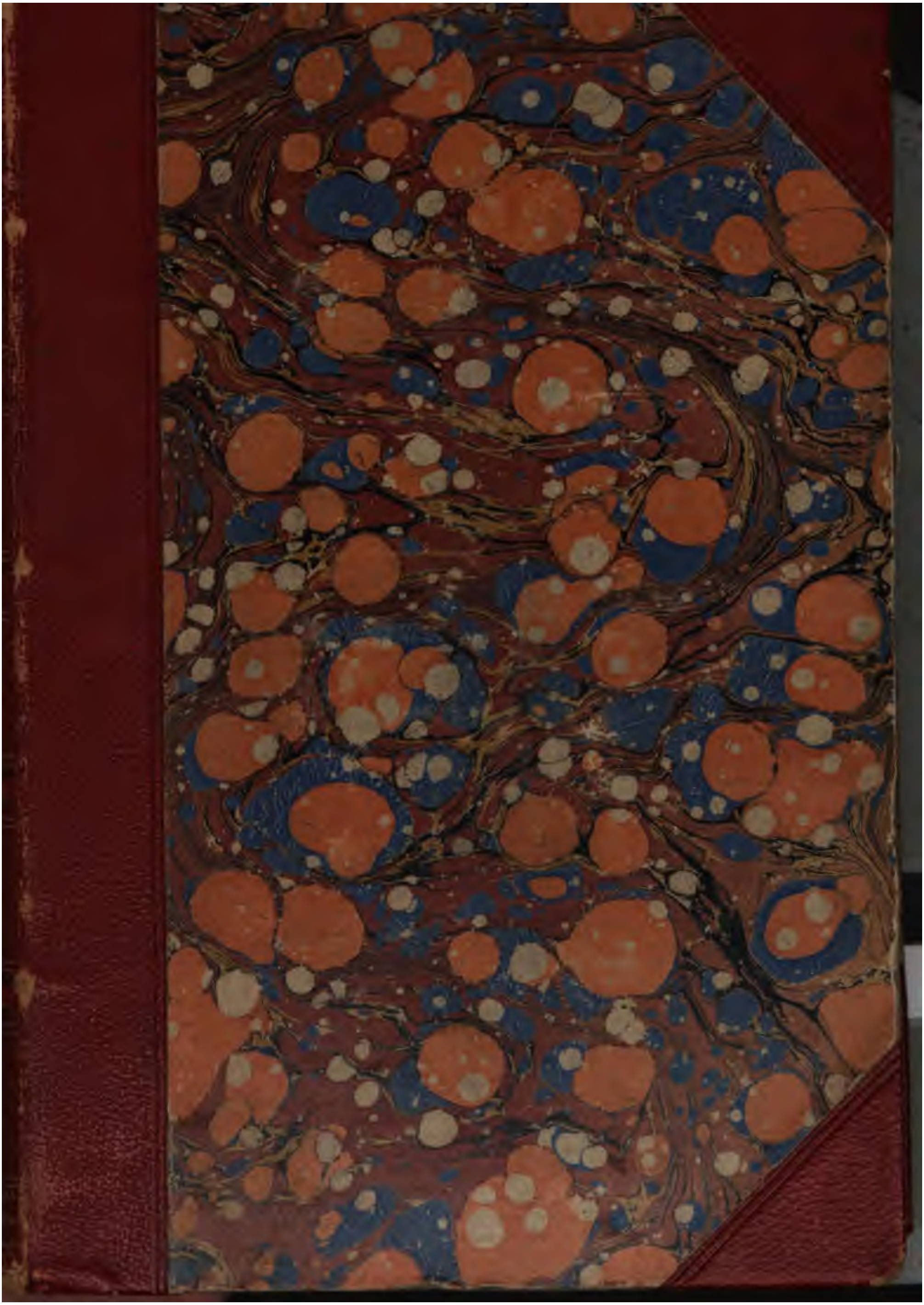
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`



If thou art borrowed by a friend,
Right welcome shall he be
To read, to study—not to lend,
But to return to me.

Not that imparted knowledge
Doth diminish learning's store,
But books, I find if often lent,
Return to me no more.

Read slowly, Pause frequently,
Think seriously, Keep cleanly,
Return duly, with the corners
Of the leaves not turned down.

Francis L. Lambton

Stanford University
Libraries

In Memory of
James G. Coffin
A.B. 1900
A.M. 1902
PRESENTED BY HIS SISTER
BESSIE R. COFFIN
A.B. 1898

[illegible]

MANUAL

OF

FIELD OPERATIONS.

MANUAL

OF

FIELD OPERATIONS.

ADAPTED FOR THE USE OF

OFFICERS OF THE ARMY.

BY LIEUT. JERVIS-WHITE-JERVIS,
ROYAL ARTILLERY.

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1852.

F28179

U102
J57

LONDON:
BRADBURY AND EVANS, PRINTERS, WHITEFRIARS.

Dedicated

TO

EVAN MABERLY, Esq.

Captain, Royal Artillery.

PREFACE.

WHEN I first began to study the great military writers, I frequently found much difficulty in clearly comprehending them, owing to the paucity of information they contain respecting the petty operations of warfare, although the campaigns which these authors relate often owed their successes or reverses to neglect in these details, which are in fact the works of the machinery of which we only see the results. The French, who pay particular attention to these matters, have them carefully taught and explained in their military colleges, and they consequently possess some valuable works on the subject. Many of these, however, lie under the objection of being too voluminous, and of entering into long particulars respecting ancient systems of warfare, which, from the weapons then in use being now obsolete, have become a study rather for the military antiquarian, than for those who are for the first time entering on the practice of the Art of War as it actually exists.

A work of this kind should be concise and to the point. It was with great pleasure, therefore, that I found one of this nature in the "Cours d'Art et d'Histoire Militaire," in use at the College of Saumur. The author, Jacquinot de Presle, has carefully avoided the tediousness of his predecessors, but, as he wrote for a cavalry school, he had restricted his lectures too much to that branch of the service. I have endeavoured to impart to the present undertaking a more comprehensive character, and to adapt it more fully to the general requirements of the British officer, keeping De Presle in view as a groundwork. As I have carefully named my authorities, it will be seen where I have differed from him. The chapter on mountain warfare is based upon Lallemand's "Opérations Secondaires de la Guerre," whilst the recent political events in Europe have induced me to attempt an analysis of the principles, which should guide the inhabitants of open towns in a defence against a foreign enemy, and influence the movements of troops when called upon to put down insurrection in cities.

CONTENTS.

PART I.

CHAPTER I.

Page
ON THE ORGANIZATION OF ARMIES AND OF MILITARY ESTABLISHMENTS 1

CHAPTER II.

ON RECRUITING 20

CHAPTER III.

ON THE HISTORICAL DEVELOPMENT OF TACTICS . . 36

CHAPTER IV.

INFANTRY TACTICS 61

CHAPTER V.

CAVALRY TACTICS 87

CHAPTER VI.

ON ARTILLERY 105

CHAPTER VII.

Page
STRATEGY, AND TACTICS OF THE THREE ARMS UNITED . 185

CHAPTER VIII.

ON MOUNTAIN WARFARE 190

CHAPTER IX.

ON THE PASSAGE OF RIVERS 219

PART II.

CHAPTER I.

ADVANCED POSTS 234

CHAPTER II.

RECONNOITERING THE ENEMY 250

CHAPTER III.

PRECAUTIONS TO BE TAKEN BY DETACHMENTS ON THE MARCH 274

CHAPTER IV.

ON ENGAGEMENTS OF DETACHMENTS 294

CHAPTER V.

Page
SURPRIZES AND PARTIZANS 308

CHAPTER VI.

CANTONMENTS 324

CHAPTER VII.

ON FORAGING 346

CHAPTER VIII.

ON CONVOYS 357

CHAPTER IX.

TOPOGRAPHY CONSIDERED IN A MILITARY POINT OF VIEW 374

CHAPTER X.

STREET FIGHTING 394

Law

MANUAL OF FIELD OPERATIONS.

PART I.

CHAPTER I.

ON THE ORGANIZATION OF ARMIES AND OF MILITARY ESTABLISHMENTS.

STANDING armies have now become as it were the fundamental principle of government amongst the several European states, but their organization differs according to, 1st. the political position of each nation with respect to its neighbours; 2nd. the state of its finances; 3rd. the customs of the people, and their aptitude for one branch of the service more than for another.

All armies are formed of staffs, and bodies of troops.

The staff consists of such persons as are either actually holding military rank, or considered as holding such; and who are not doing duty with any particular corps.

The assembly of all military men of the same corps, holding any rank whatsoever, forms the *nucleus* of that corps. The nucleus, both of staffs and of bodies of troops, must, therefore, be placed on a proper footing; for upon them depends the instruction and discipline of the private soldier, as well as his steady behaviour before the enemy.

In time of peace, a too numerous staff is a burthen to the state; as but a small number of it can be employed; yet is it a still greater burthen in time of war, for then scarcely any one could exercise the due portion of authority given him by his position, and the collisions between those holding the same rank would be continual,—thereby creating a bad feeling in the army, and impeding its operations. The campaigns of the French imperial armies afford many instances of this, in the constant quarrels between their generals.* These considerations likewise apply, in many ways, to the nucleus of a body of troops: for if too strong, it will be formed with difficulty; the daily duty will become irksome to the private soldier; the respect for rank will be diminished; and no one being honoured or satisfied in his own position, an unreasonable ambition will be created. But, on the other hand, if the nucleus be too weak, proper attention cannot be paid to the private, and discipline will suffer. Experience, also, has proved that the proportion of recruits joining these nuclei should not, if possible, exceed one-third of the old soldiers already in them; especially in the cavalry and artillery, where greater care is required for a *matériel* liable to be injured or destroyed.

As it is of consequence that new levies should be instructed in their several duties previous to joining the corps for which they are destined, certain places are chosen, where every necessary for the equipment of men and horses can be easily obtained. These places are termed depots.

A well-organized system of depots is of the utmost importance to enable a nation to push forward a war with vigour, as well as to repair the losses occasioned by it. Their situation should, if possible, never be changed, as every alteration deranges the system and regularity of the drills carried on; for this reason, therefore, they should be placed in the interior of the country, so that the first disaster should not, by necessitating their removal, cause those instructions, of which the army awaits the fruits, to be interrupted. With respect, however, to the infantry depots of a country possessing many fortified places on the frontier, it is both economical and convenient to make use of recruits in their defence.

---

* De Ségur's Exp. de Russie, 1812.

For the instruction of recruits at the depots, a nucleus should be composed of old soldiers, who, either on account of age or wounds, have been rendered unfit for the fatigues of war. But, besides, the particular care required for the proper training of men and the breaking-in of young horses, also demands that, in addition to these old soldiers, there should be others, who, by previous instruction, are well fitted to hasten the progress of the new levies.

The Austrian army, which, for more than a century, has suffered greater disasters than any other in Europe, has shewn how a well-managed system of depots, for men and horses, gave her the power of reorganizing armies, so often destroyed, yet always renewed.

It is this difficulty of breaking-in horses and instructing recruits, which requires that those intended for the cavalry and artillery should be kept at the depot a longer period than infantry. These corps should, therefore, be always on such a footing, that at the breaking out of a war, they may not only be fit to take the field, but, also, able to repair their own losses, until such time as the fresh levies are able to join them.

Regiments should be in sufficient number to enable them to admit recruits without disproportioning the nucleus: otherwise, experience proves that it is preferable to increase the number of battalions or squadrons in a regiment, by dividing the nucleus, and proportioning the old soldiers with the recruits. By this means, the formation of provisional corps will be avoided; for such bodies, created at the breaking out of a war, and disbanded at its cessation, seldom possess energy or discipline, as each man feels his position is without stability.

In cavalry corps, it is essential to have more men than horses, in order that proper care may be taken of such of the latter as belong to the sick, or to men on furlough. If the number of men, who are prevented by various causes from attending their horses, be computed, it will be found that the proportion of dismounted men should be at least one-fourth, who, to be enabled to join squadrons in the field, would only require horses. In the British army, the proportion is 271 horses to 360 men of all ranks.*

The organization of cavalry into permanent squadrons commanded and administered by the same officer, was first introduced into France in 1776, but suppressed some years after; it was again adopted in the year 1815, and has, since then, become the system of the Russian, Prussian, and German powers: England, alone, has still retained the system of separate troops.

From the great destruction of horses in a campaign, squadrons should not consist of less than from 120 to 140 horses; and, in a well-established depot, they should be kept up to that strength.

Light cavalry should be more strongly constituted than heavy; for its duties are more severe, and it is exposed to greater losses.

All cavalry and artillery should be on an imposing footing during time of peace, if they are intended to be effective in the field. The officers will then be enabled to mature their judgment, and learn how to lead large masses; both which things are impossible when these corps are weak in horses. Confidence is seldom found in weak regiments; the soldier feels the want of support, and the smallest detachment is sensibly felt. It is better, therefore, to have a small number of strong corps, than a large number of weak ones; for, the command being more concentrated, there will be less jealousy between the commanders, instruction will be more identical, and the administration less expensive.

The Austrian cavalry are organized upon these principles;

---

* Report on Army Expenditure, 1850; p. 262.

its corps of cuirassiers and dragoons have six squadrons of 140 horses each, and the light cavalry, eight squadrons. The Russians have, when on service, eight squadrons of 160 horses each, and one depot squadron.

As it is necessary that the soldier should have perfect confidence in his weapon, and as all corps that have the same duty and the same weapon, acquire a peculiar spirit, men differently armed and equipped should not be placed in the same corps; for this creates rivalries, and renders instruction difficult, whilst it gives rise to daily comparisons that lessen the self-confidence so necessary to a soldier. No less serious are the inconveniences resulting from one corps doing the duty of another; as, for example, hussars doing the duty of cuirassiers, or dragoons that of lancers: for the spirit of these different branches of the service neither can nor ought to be the same.

If possible, no corps should be wholly composed of soldiers from the same district: this engenders a spirit quite different from that which ought to animate an army; besides, districts thus recruited from, cruelly feel the ravages made by war. A great nation, where many languages are spoken, and where civilization is not equally diffused, should mix the recruits from the different provinces: they will thus acquire a national language, attach themselves to national institutions, and feel that they are one and the same people. The consequence of this principle is, that corps should not be placed in permanent garrisons in the provinces from whence they are recruited: for, though such a system would be most economical, and though the expenses of removal, or of forwarding the recruits from the depots, would be thereby avoided; yet, the military spirit, that feeling which takes a man from his family, to adopt another which lays more severe duties upon him; that feeling which enables a man to look calmly at the dangers which await him, cannot be acquired if he remains near his home, where he will be a soldier only in name.

The proportion of cavalry to infantry can only be determined in an approximative manner. It depends upon the country into which the war is most frequently carried, and on the facility of obtaining horses. Merely to possess a numerous cavalry, in order not to be inferior in this branch of the service to neighbouring nations, would be of little consequence, unless there were, at home, the means of remounting it. It is true that it might possibly be supplied at the expense of the enemy: but the war might be unsuccessful, or a political event might prevent the purchase of horses from abroad. An example of this was given lately (1848) by the Grand Duchy of Luxemburg, which ordered that no horses should be allowed to be sold, except to the Germanic Confederation; and, besides, the desire of obtaining a numerous cavalry would probably lead to carelessness in the choice of horses. The result of any of these causes would be a bad, or at least an inferior, body of cavalry, which would never attempt a bold action, and perhaps perish in a single campaign.

The proportion of cavalry to infantry varies in the organization of all armies. In France and Austria, it is one-fifth; in Prussia and Bavaria, one-fourth; in Russia, one-sixth. In England, it is only about one-eighth; but this is accounted for by the difficulty that Power finds in transporting horses to the seat of war.

In an army on service, this proportion is determined by the nature of the country into which the war is to be carried. For instance, a force destined to act in a country like Belgium, which is fertile and abounds with plains and forage, would have a stronger amount of cavalry than one intended for a mountainous country, covered with vineyards and ravines, like Italy, where frequently the cavalry can only charge upon roads. But, as a general rule, in a flat country, an army on service should have an amount of cavalry equal to one-sixth of its force; and, in a mountainous country, to one-tenth.*

---

* Jomini, Art de la Guerre, ch. vii., art. 45.

The strength of heavy cavalry appears generally to be fixed at about one quarter of that of light cavalry and dragoons: for it has been thought necessary to multiply that branch of the service whose duties are the most severe, and whose losses are the most numerous; whilst that which is the most difficult to recruit, and most expensive to mount, is, of course, in a less proportion.

The particular care required for the organization of cavalry and artillery is not necessary for that of infantry, which is formed more quickly, because the influence of the nucleus is felt more powerfully throughout; and, being required to combat on all grounds, infantry is always proportionally more numerous.

The organization of artillery is based upon the strength of the army, and the number of fortresses to be defended.

One of the most remarkable examples which can be cited, to enable one to judge of the influence exercised by this branch of the service upon the success of armies, was afforded by Napoleon after the battle of Eylau. The tremendous loss which his troops had suffered from the fire of the numerous Russian artillery, made him feel the necessity of increasing his own. With an activity difficult to conceive, and at a distance of 400 leagues from his frontiers, he doubled both the *personnel* and *matériel* of his artillery—a thing unheard of before in the annals of warfare.*

The organization of the companies of Field Artillery, among the different powers of Europe, is based upon the following principles:—†

1st. A complete distinction between the corps of gunners and that of drivers. In this case, the two corps only meet, in time of peace, when required for manœuvres, and, in time of war, to form the batteries; but, in all cases, these two corps are simply in a state of juxta-position. This is the present system of Wurtemberg.

---

* Ibid. art. *46.*

† *Journal des Sciences Militaires*, 1848.

2nd. The permanent union in a field battery of the corps of drivers and gunners; but forming, nevertheless, two distinct corps in juxta-position, commanded by the officers and non-commissioned officers of the same battery. The battery is thus formed of two separate corps, as far as regards their duty and instruction, inhabiting the same rooms and living together. This is the French and Dutch system.

3rd. The complete suppression of any distinction between the corps of gunners and drivers, by giving them an identical instruction. By this means, there can be no rivalry between the two corps, and every artilleryman is able to act both as driver and gunner; thus, under every circumstance, guns can be served and driven by the same body of men. This is an immense advantage when the corps of either gunners or drivers may have suffered much loss. This system is adopted in England, Russia, Prussia, and Sardinia.

A company of artillery should be of sufficient strength to manœuvre a battery of six or eight pieces; a number divisible into sections; easily taken care of, or placed in position. It should be accompanied by the necessary workmen for repair of material, and by the artificers who make up its ammunition. Artillery has this advantage over other troops, that, acting in the field by single companies, it can be recruited from the home companies by well exercised gunners; whilst the vacancies in the other corps are filled up with recruits.

Artillery at all times should be well horsed; for rapid movements with guns and waggons cannot be made without good cattle, well driven, and well taken care of.* In order to facilitate this as much as possible, every troop of cavalry in the British service has ten horses furnished with lassos, to draw the guns in case it be required.†

With an army in the field, the numerical proportion of artillery depends on the strength and quality of the other branches of the service, the organization of the enemy's forces, the nature of the country, and that of the proposed war. The proportion will therefore vary from one to three guns per thousand men.* An invading army, for instance, will have fewer guns in proportion to the number of men; its object being to move on rapidly, and force the enemy's positions by a combination of bold attacks; it would therefore not encumber itself with a numerous train of artillery before its communications with the base of operations were well secured. A defensive army, on the other hand, must have a larger proportion of artillery, to infuse some of that ardour which a defensive position seldom calls out.

---

* Wellington Despatches.

† H. M. Regulations.

The following proportion and distribution of artillery for active service, with a force of 24,000 infantry, and 3000 cavalry, was recommended by a committee of artillery officers, in a report to the Duke of Wellington:—

"The infantry was supposed to be formed into three divisions, and the cavalry into one. With this force, it was proposed to have ten 9-pounder batteries, three being horse artillery, and seven field batteries. Each division of infantry to have two field batteries, and the division of cavalry one battery of horse artillery, attached to them. The remainder, consisting of two batteries of horse artillery, and one field battery, to form the reserve. Each 9-pounder to be provided with 166 rounds of ammunition; and each 24-pounder howitzer, with 144 rounds. The reserve gun ammunitions to be conveyed in sixty limber waggons, being in the proportion of one waggon for a piece of ordnance. This would complete the ammunition in the field to 257 rounds per gun, and 204 rounds per howitzer."

The Duke of Wellington remarked upon this paragraph—"There being enough for one battle with the batteries, there ought to be enough for a second with the army in the park or reserve; and enough for a third in a field depot, which would be fixed according to the dispositions of the Commander-in-chief."

---

* *Decker's* "*Guerre de Sept Ans.*"

The Committee considered that this would cause an increase of about thirty ammunition waggons.

A portion of the reserve of the gun ammunition, consisting of a waggon for every two pieces of ordnance, to accompany the divisions of infantry and cavalry; the remainder of the gun ammunition to be with the general reserve. The reserve of small-arm ammunition to be carried in 100 limber waggons, each carrying 20,000 rounds;—four to be attached to the cavalry division, twelve to each division of infantry, and sixty to be with the general reserve. The gun and small-arm ammunition attached to divisions of infantry, to be formed into reserves, each under a captain; that attached to the cavalry division, under a lieutenant.

The gun and small-arm ammunition waggons in the general reserve, to be formed into divisions of twenty waggons each, and each to be under a captain.

The following carriages to be attached to the reserves of ammunition—

To the Cavalry reserve	One forage and one store waggon.
To each divisional reserve	One forage, one store waggon, one spare Howitzer carriage.
To each division of the general reserve .	One forage and two store waggons

According to the foregoing arrangement, the small-arm ammunition would be distributed as follows:—

For the Infantry—			
In possession of the soldier	60	rounds.	
Thirty-six waggons, with the divisional reserve .	30	„	
Sixty waggons, with the general reserve .	50	„	
Total .	140	„	per man.

For the Cavalry—			
In possession of the soldier	30	rounds.	
Four waggons with the Cavalry reserve . . .	30	„	
Total .	60	„	per man.

This proportion was considered sufficient, by the Duke of Wellington, with 1,200,000 rounds in depot, being 50 rounds per man for the infantry.

A troop or company to be attached to each battery; making three troops and seven companies, and a half troop or company to each reserve of ammunition: making in all, three and a half troops and eleven companies, without reckoning the drivers, which were then a separate establishment.

The following would be the number of horses:—

Three batteries of Horse Artillery, at 220 each	660
Seven ditto of Artillery, at 164 each	1148
One division of Cavalry reserve ammunition	44
Three of Infantry divisional reserve, 111 each	333
Two divisions of general reserve gun ammunition, 120 each	240
Three divisions of general reserve small-arm ammunition, 120 each	360
Total of Artillery horses	2785 *

The strength of the engineer corps is determined according to the number of infantry divisions they are attached to, the fortresses to be defended, and the reserve required for the sieges which it may be necessary to undertake.

A company of pontooniers should be strong enough to manœuvre the *matériel* of sixty or eighty boats, sufficient for a river of 300 to 350 yards in breadth; and should, besides, contain all the workmen necessary for constructing or repairing this *matériel*.

The gendarmerie—a corps entrusted with the repression of military crimes, when an army is on service, the maintenance of good order in the camp and on the march, the furnishing of safeguards, &c.—is nowhere so well organized or so numerous as in France. There it numbers many thousand horses, which, when necessary, can contribute a valuable resource for remounting the heavy cavalry; all these horses perhaps are not fit for active service, but far the greater part would answer better than young horses, which have to undergo so many trials before they are enabled to join the squadrons in the field. Austria also possesses a strong corps of gendarmerie.

---

* British Indian Military Repository, vol. v.

The only body approximating to these in the British service, is the Irish constabulary; a very efficient body of men, but only raised for service in Ireland.

The French, in 1848, established a corps of guides, formed by taking six men from every squadron of cavalry. The qualification for this corps consists in good character, and being able to speak one or more languages.

The Russians and Prussians have adopted a war organization for their armies during time of peace; that is to say, they are divided into *corps d'armée,* which are each complete in themselves, so as to be at once ready to take the field on the breaking out of a war.

Arsenals and other military establishments of a nation should be so protected, that they should not easily fall into the hands of the enemy in time of war. Although the frontiers should not be entirely bereft of arsenals, yet these ought, as much as possible, to be placed in central situations. Of what use were the arsenals of Metz and Strasburgh to France, when its armies were fighting on the banks of the Marne and Seine? If the positions of these military establishments be considered, they appear rather intended to facilitate the invasion of another country by France, than a means for her own defence.

The two invasions of 1814 and 1815 having demonstrated the danger of this system, France has begun by degrees to remove her depots into the provinces best sheltered from foreign attacks. The manufactories of small-arms are Mulzig, St. Etienne; that of Tulle, rendered so difficult of access by the mountains of Limousin, has been enlarged; and another at

Châtelherault, equally well situated, has been founded. These can furnish about 300,000 muskets yearly. The powder-mills are at Esquerdes, St. Ponce, Metz, Vonges, St. Chamas, Toulouse, Angoulême, St. Médard, Pont de Buis, Maromme, Le Bouchet, and Le Ripault. These twelve establishments are under the superintendence of a lieutenant-general of artillery, and in war time can supply 3,200,000 kilog. at 2 f. 10 c. the kilog.

The principal military arsenals are, Strasburgh, Toulouse, Douai, Auxonne, Rennes, and Metz. The three first possess cannon foundries, and can each furnish 1000 guns a year.

The iron for guns and projectiles is chiefly obtained from the departments of the Ardennes, Moselle, Doubs, Cher, Nievre, and the Loire Inférieure.*

The principal military schools are at Saumur for cavalry, St. Cyr for infantry, Metz for second lieutenants of artillery, and the École Polytechnique. This celebrated school owes its origin to Lamblardie, who conceived the idea of uniting into one the remains of the several military and engineer colleges broken up by the Revolution. Encouraged by Monge, Carnot, and Prieur Duvernais, Lamblardie succeeded in forming, on the 28th September, 1794, a central school for public works, at Paris. On the 1st of September, 1795, the National Convention reorganized it, under the name of École Polytechnique. In 1805, it received a military organization, and was placed under the minister of war. In 1814, formed into three companies of artillery, the pupils of the École Polytechnique defended the Barrière du Trône with twenty-eight guns, but the feeling of independence created by this event gave much trouble in after years to the college authorities; and, in 1816, 1830, and 1832, it had to be dissolved and reorganized. The examinations for the school are public to all France; but, as the scholars have to pay an annual sum of 30*l.*, besides a deposit of 40*l.* for clothing, and as the education is expensive, it is very much confined to the wealthier classes. Not only does it furnish officers of artillery, but also civil and military engineers of every description. Government gives twenty-four gratuitous scholarships. On leaving the school, the pupils who are intended for the artillery or military engineers, proceed to Metz, where they remain two years, at the end of which time they must pass a fresh examination previous to joining. But, as a reward, they are given four years' free service towards their pension.

---

* Jacobi sur l'Artillerie Française; Maurice Baron de Sellon sur la Défense Nationale *en Angleterre.*

France also possesses regimental schools for the artillery, which are theoretical as well as practical, both for officers and men. These are at Metz, Strasburgh, Toulouse, Douai, Lyons, Bourges, Besançon, Rennes, La Fère, and Vincennes. The three first, being the united schools of two regiments, are termed *grandes écoles*. There is also a school of pontooniers.

Austria has united the greater part of her military establishments at Vienna, and in its neighbourhood; it has there a manufacture making 20,000 muskets yearly, a large arsenal, cannon foundry, powder mills, schools for artillery, engineers, pontooniers, and artificers. The cavalry school is at Neustadt; the manufacture of steel weapons at Steyer, upon the Enns; powder mills at Vienna, Linz, and Steinfeld; arsenals at Vienna, Prague, Gratz, Budweiss, Brünn, Verona, Olmutz, Pesth, and Lemberg.* But Vienna is 160 leagues from Strasburgh; Moravia and Bohemia form a good frontier against Prussia; Moravia and Galicia against Russia; Hungary against Turkey. Vienna is therefore in the centre of the Austrian empire, so it is with reason that it has there united its depots.

On the other hand, Prussia, easily penetrable, presents no advantageous frontiers, and has therefore dispersed its establishments, in order to possess resources everywhere. The manufactories of small-arms are at Saarn, near Dusseldorf; at Sühl, in the mountains of Thuringia; at Potzdam, and Spandau, one is a dependence of the other; and at Dantzic.

---

* Spectateur Militaire, 1840—41; Statistique Militaire des Armées Etrangères.

The steel weapons are made at Neiss, in Silesia, the foundries of which province cast iron guns for its fortresses. The arsenals are at Berlin, Posen, Neiss, Dantzic, and Deutz, opposite Cologne.*

Berlin possesses numerous military schools. The cannon foundry and large powder mill, which used to be there, have been transferred to Spandau.

The Russian establishments are founded on extensive bases; and, being well kept up, will soon be enabled to supply their army. They have mostly been organized by strangers; and the proceeds of the factory are made to keep pace with the progress of science. The chief arsenals for the construction of gun-carriages, &c., are at St. Petersburgh, Moscow, Novogorod, Riga, Kief, Briansk, Kasan, &c. The manufactories of small-arms are under the direction of a general officer of artillery. The one at Tula, founded by Peter the Great, has, since 1817, been superintended by a Mr. Jones, from Birmingham. About 70,000 fire-arms and 25,000 sabres are annually made there, giving employment to 16,000 of both sexes. The manufactory of Ijefski, on the Ije, a tributary of the Kama, and situated in the district of Paraboul, government of Viatka, is rapidly increasing, and will soon furnish from 50,000 to 70,000 muskets a year. The workshops of Sestrabek, near St. Petersburgh, supply 30,000 stand of arms yearly. Zlakoust, in Siberia, exclusively for steel weapons, was founded in 1815, by means of workmen from Klingenthal in France, and Solingen in Rhine Prussia: it can already work 60,000 sabres. The small-arms for artillery are made at Briansk, government of Orel.

---

* Spectateur Militaire, 1841; Statistique Militaire des Armées Etrangères.

The iron for guns is found at Votka, government of Viatka, Kaluga, Warsaw, and at Petrozavodsk. The foundries are at St. Petersburgh, Moscow, Riga, Kasan, Kherson, and Petrozavodsk, which has been brought to great perfection by an Englishman named Gascoigne. The chief powder mills are at Okhta near St. Petersburgh, Kasan, Bogorodsk, government of Tula, and Gloukhof, government of Tchernigof, &c. The military schools are divided into four distinct classes: 1st. schools for nobles; 2nd. for *corps d'armée;* 3rd. for soldiers' children; 4th. technical schools for artillery and engineers. The military schools for nobles are twenty-six in number, with nearly 9000 pupils, and furnish the army with from 800 to 900 officers a year.*

With the exception of the kingdom of Sardinia, which has two fine arsenals at Turin and Alexandria, none of the Italian states can be said to possess any military establishment.

Those of Spain are mostly situated in judicious positions, although some of them are too near the French frontiers. There are manufactories of fire-arms at Madrid, Placencia and Oviedo. Those of steel weapons are near Toledo, Mondragon, and Elgoybar, in Guipuzcoa. There is a cannon foundry at Seville; an arsenal for gun carriages at Barcelona; a powder manufactory near Murcia; and a military school, for all branches of the service, at Segovia. But, to give an idea of Spanish military establishments, we may state, that, though the powder manufactory of Murcia is bound to furnish government with 1,500,000 pounds of powder yearly, it barely supplies 800,000; and that, during the peninsular war, the manufactory of small-arms at Riboli did not furnish a single firelock during six months, though able to manufacture 250 a week.*

---

* Statistique Militaire des Armées Etrangères; Spectateur Militaire, 1842; M'Culloch, Geog. Dict.

Great Britain, with respect to her military establishments, has endeavoured, as much as possible, to place all the labour, which the keeping up of a large force entails, in the hands of private manufacturers; avoiding thereby the system of government monopolies, and diffusing the profit more evenly over the country. The principal arsenal is at Woolwich, where there is a foundry for brass guns, as well as a manufactory for every kind of gun and military carriage. It has been found more economical to the nation that these should be made in government workshops; for brass being a metal of great value, and being difficult to test after casting, it was considered doubtful whether contractors would give the very best metal: besides, government can make their brass guns at 140*l.* per ton, when, in the market, the price demanded is nearly double that sum. Gun carriages also require the greatest care in the selection of the wood employed, and in the soundness of the work. Iron guns are, however, furnished by contractors, who, if required, could supply 4000 a year: the principal foundries are, Low Moor, Gospel Oak, Warrington, which can supply from 500 to 600 a year, and Carron as many as 1500. The contract price is 12*l.* 10*s.* to 12*l.* 15*s.* a ton; the pieces to be delivered at Woolwich, where they are subjected to the severest trials before acceptance.† Small-arms are chiefly made in the Birmingham workshops, the barrels and locks being contracted for by different parties: locks are also made in London. There is a small government factory at Enfield; but it is kept up more as a check to prevent the Birmingham and London contractors forcing their own prices. The setting up of muskets is performed partly at Birmingham, partly in London, and also at Enfield, in which latter place all swords are made, as the steel furnished by contractors was found very defective on service.* The cost of each musket in England is 2*l.* 16*s.* 8*d.*, as the following list of items will shew:—

---

* Prontuario de Artilleria. M'Culloch, Geographical Dictionary.

† Report on Ordnance Expenditure, 1850.—Colonel Dundas's Evidence.

	£	*s.*	*d.*
†Barrel in the filed state	0	12	0
†Lock, ditto	0	7	0
Bayonet	0	2	10
Rammer	0	0	9
Stock in the rough	0	3	0
‡Jointing and percussioning of lock done at Enfield or Birmingham	0	0	3½
Hardening tumblers and freeing locks	0	0	1½
Jegging barrels and filing lumps	0	1	0
Three bolts	0	0	1½
Brass-work in the rough and two side cups	0	1	2
Cock in the stamped state	0	0	2½
Breech and side nails, three	0	0	1
Nipple	0	0	5
Wood screws, five	0	0	2
‡Back sight	0	0	2½
Spring-bar for bayonet	0	0	5½
Spring for rammer	0	0	2½
Pair of swivels	0	0	4
Trigger	0	0	0¾
Setting up paid to contractor	1	6	3
Total	2	16	8

It is said that, during the war, Birmingham furnished government with 30,000 muskets a month:§ but this cannot be taken as an example of what it could do in the way of such finished muskets as are required at the present day; one quarter of that number would no doubt give full employment to the trade of that city.

Gunpowder is also chiefly furnished by contract, private mills supplying about 12,000 barrels‖ a year; whilst the government only manufactures 6000 barrels. The present average price of saltpetre is 30*l.* a ton, and that of sulphur 12*l.*; but, during the war, saltpetre rose as high as 100*l.* a ton: for this reason, therefore, a reserve of 170,000 barrels of powder is kept up in England alone, calculated on the expenditure of the last war, which was 77,000 barrels a year. The principal depot is at Purfleet on the Thames.*

---

* Report on Ordnance Expenditure, 1850.—Mr. Lovell's Evidence.

† These are supplied by contract. ‡ Made by machinery.

§ M'Culloch's Geographical Dictionary.

‖ The barrel used to contain 90lb.; it now holds 100lb.

The military colleges are at Sandhurst and Woolwich, with a practical school for engineers at Chatham.

---

* Report on Ordnance Expenditure, 1850. Capt. Tulloh's evidence.

CHAPTER II.

ON RECRUITING.

In England and Scotland, a system very analogous to the militia had existed for many centuries, previous to the formation of an army paid and equipped by the State. In the former country, the yeomen were a thoroughly organized body, the lengths of bow and arrow which were to be used being fashioned by order of the King; and, in Scotland, as far back as 1313, Robert Bruce ordered every man possessing a cow to be furnished with a spear, or with a bow.* Consequently, in war time, they formed a most effective infantry; whilst, in France, the lower orders were considered but as "*ribaudaille*," as they were termed by Philip of Valois: † yet it was in that country that the first standing army in Europe was created, by Charles VII. This prince, in the year 1445, organized fifteen companies of men at arms, of part of the troops which had helped him to re-conquer his kingdom from the English; ‡ thereby forming a corps of 9000 chosen horsemen: to these he added, in 1448, a regular infantry, termed *francs-archers.*§

---

* Tytler's History of Scotland, Vol. II.

† Etudes de l'Artillerie, par le Prince L. N. Bonaparte.

‡ Each company consisted of 100 lances, and the lance of six horsemen, viz., the man at arms, three archers, a *coustillier*, or esquire armed with a cutlas, and a page or varlet. Each man at arms brought four horses, one as a battle-horse, one *courtaut* or hack, a baggage-horse, and one for the page, who filled much the same situation that cadets do now, as in the Austrian service. See Le Père Daniel. Hist. de la Milice Française, vol. i., lib. iv.

§ From every fifty hearths furnishing an archer *franc de taille* (free of tax).

This institution was more or less adopted throughout Europe; but, in England, no standing army was allowed to be maintained, until after the Restoration; when Charles II., at the breaking up of the Parliamentary army, retained 4000 foot and 1000 horse. The citizens, who, until this time, had been accustomed to defend their towns, and the tenants, who had been used to follow their landlords to the field, soon forgot the usage of arms; and, finally, the army had to be raised either by voluntary service, or by rendering it obligatory to certain classes. Yet, though recruiting has thus become the basis of all military institutions, it cannot be the same in all countries. It must be adapted to the temperament and to the social state of a nation; otherwise its military constitution will be bad, and its independence always menaced. The conquest of Holland in 1795, the partition of Poland, the fall of the Republic of Venice, the conquest of Portugal in 1808 without a blow being struck in its defence, afford recent and remarkable proofs of these truths.

Tumultuous levies to defend a state can never be depended upon for any length of time, and the discipline of regular troops will always triumph over them. It is impossible for simple citizens, who have been long accustomed to peaceable occupations, suddenly to become soldiers; they will dearly pay for their inexperience, and only expose their country to the disaster of an invasion before they are prepared to defend it. Such was the consequence of the rising in the United States of America from 1775 to 1783, that of the French Revolution in 1793, of the Spanish levies during the War of Independence, and, lately, that of the province of Lombardy in 1848.

The more severe the system of recruiting is, in any country, the shorter the term of service should be. If it is expected that a man, obliged by the laws to enter the military service of his country, should do so without repugnance, and that he should not endeavour by insubordination or desertion to free himself from it, *he should either* have before him the prospect of a competency in after life, or the certainty that, after leaving his regiment, he will have sufficient time to obtain that competency, by working at his former trade.

The length of service should also be calculated upon the aptitude of a nation for any particular branch of the service, and the difficulty of forming special corps. There will always be, with respect to this, a difference of opinion between a civilian and those military men who take an interest in their profession: the one feels the inconvenience of a long stay for young men in the army, on account of their families; the other only consider the advantage of retaining old soldiers, and the trouble of instructing men who leave them as soon as formed.

The length of service and the systems of recruiting differ in all nations.

In the Austrian Empire (with the exception of Hungary and Transylvania), the army is raised by conscription; the whole country is divided into districts, where each regiment has its own conscription depot.

Hungary and Transylvania furnish a certain number of regiments: this number is annually voted by the National Diet, and forms a force of about 64,000 men, comprising about 17,000 cavalry, raised from the class of the peasants. The length of service was also fixed by the Diet, and averaged ten years. In time of war, government can call on every noble * to yield military service, which is termed an *insurrection:* but from its defectiveness in point of military organization during the late war, the nobles are not likely to be called upon again.†

The Tyrolese form splendid rifle corps, but have a strong repugnance to military discipline: of late years, part of a regiment of rifles, raised for service in the Tyrol, has been removed to another province, to the great dissatisfaction of that people.

---

* Nobility in Hungary is not a rank but a privilege.—*Paget's Hungary.*

† Turnbull's Austria, vol. ii. chap. x.

The first men in each Austrian infantry regiment are formed into grenadier companies, usually in garrisons at Vienna, Prague, or Milan: they form a corps of twenty battalions.

The Austrian government has lately, as well as the higher classes of gentry in Hungary, paid great attention to the improvement of the breed of horses, which are found wild in Hungary, Gallicia, and Transylvania.

There are upwards of seventy government studs in Gallicia, and sixty in Transylvania. At the time of the expedition to Naples, in 1820, General Count Hardegg, director-general of the government studs, furnished the army with 30,000 horses, and he could have procured a greater number.*

The system of the Austrian military frontier, first organized as a means of defending the country against the frequent irruptions of the Turks, was originated by Prince Eugène of Savoy, and carried into effect by Marshal Lascy. At present, it is made use of during peace, for the purpose of guarding the quarantine and custom; and in time of war, forms part of the standing army. This has been effected so perfectly, that, in time of peace, nearly 4000 men do duty along 800 miles of frontier; and they not only clothe and feed themselves, but pay heavy taxes besides: and also perform a quantity of military and civil services. From thirty-six to fifty acres constitute a fief, each of which is bound to furnish, maintain, and clothe, according to its size, one or more soldiers; the fiefs are given to families often composed of several members, of which the eldest is the house-father, who, along with the house-mother, has the direction of the farm, the care of the house, and the right to control the whole family. The fiefs cannot be sold; the land is cultivated for the common good of all the members of the family; and the profit, if any remain after the taxes and other expenses are defrayed, is divided among them. In most cases, several married people with their children, to the number of fifty individuals, live under the same roof, cultivate the same land, eat at the same table, and obey the same father. The border family has to perform civil service for the state, such as the repair of post roads and bridges, draining of swamps, &c., one day per annum for every English acre, and eight days for the village. The borderer's chief tax, besides furnishing his uniform (government supplying arms, boots, &c.), is the land tax, amounting to fifteen or thirty shillings a year. In time of peace, he repairs to his military station for seven days at a time, when the family supplies him with food. The number of men on service usually amounts to 4000; but, in times of disturbance, on the Turkish side, or when the plague is drawing near, it is increased to 6800; and, in times of still greater danger, to 10,000. In time of war, the borderers must form a part of the regular army, and march out of the country if required. The regular disposable force amounts to about 40,000 men; but, if the reserve and Landwehr be called out, it will amount to 100,000 men. By means of alarm bells and fires, the entire force can be mustered in four hours, along the whole extent of the frontier.*

---

* M'Culloch, Geog. Dict. Des Remontes de l'Armée, by Lieut. Gen. Marq. *Oudinot, in the Spectateur* Militaire, 1842.

In France, the army is recruited by an annual levy of nearly 80,000 men above twenty years of age. The conscripts are chosen by ballot for a term of eight years; five of which are for actual service, the other three in reserve. The exemptions from service are, first, being under 5 ft. 1⅘; second, natural infirmity; third, being the eldest of a family of orphans; fourth, the only son of a widow; fifth, of a father incapable of supporting himself, or who is above seventy years of age; sixth, the eldest of two brothers who have drawn unfavourable lots at the same conscription, if the younger is fit for service; seventh, he who has a brother in the service, or who had one who died in the service or who has been obliged to retire from the service through wounds or infirmities; eighth, pupils of the École Polytechnique, École Normale, Collèges de France, and such young men as have, previously to their being liable to service, made a contract before the Council of the University, engaging that they should follow the career of professor: ninth, men intended for the Church, and prizemen of the Institution and University. All individuals condemned to infamous punishment, to two years' imprisonment with hard labour, or who have been placed under the surveillance of the police, are declared incapable of serving.*

---

* *United Service* Journal. 1842. Paget's Hungary.

It is a remarkable fact, that, notwithstanding the military spirit of the French people, the voluntary recruiting, before the year 1792, only averaged 16,000 men a year, of whom Paris alone furnished one third; and yet that was at a period when wealth was less general than at the present day. Since 1815, voluntary enlistment averages about 5000 per annum, besides about 4000 who re-enlist, and almost always choose the infantry or light cavalry.

The number of young men who have attained the age of twenty years, annually varies in France from 300,000 to 320,000: of whom it is calculated that about one fourth are exempt from service on account of their height or other infirmity; besides, one fifteenth are exempted from civil causes. About 220,000 men can therefore be calculated upon annually as fit for service. The annual average cost to the State, of each soldier, officer and private, is about 26*l.*,† which varies slightly, more or less, according to the price of food and equipments.

France does not possess any very good breed of horses for remounting her cavalry; and, within the last few years, she has been obliged to make some very large purchases from abroad. Light cavalry horses are found in the Navarrois, Limousin, and Bretagne. Heavy cavalry horses might, in course of time, be obtained from Normandy; but, at present, they partake more of the carriage horse. A breed suitable for artillery is found in Poitou and La Perche. The price of cavalry horses averages 25*l.*; being an increase, since 1820, of about 8*l.* The wars in Algeria have so denuded that province of horses, that what the government could purchase in 1833 for 10*l.*, rose in 1847 to 17*l.*; and, since then, horses for remounting the cavalry have been imported from France itself, Spain, Sardinia, and Tunis. The Chamber of Deputies took serious notice of this state of affairs in 1847; and directed that measures might be taken to correct the evil. It was found that the annual loss of horses was, in France, 144 per 1000, and in Algeria, 263. They were fast disappearing from amongst the native tribes, through the wasteful manner in which the troops had made use of them; the government having, as late as 1846, purchased 600 mares for the fifth Chasseurs: yet, as the amount of government horses was 10,000, it required about 4000 yearly to keep them up. In 1847, Lieut.-Gen. Oudinot was sent on a mission to Tunis, to see what might be done in that country; but, in his report to the Minister of War, he states that "the resources of Tunis in stallions, and even in horses fit for war, have been exhausted through the French wars." Studs have been established in Algeria, and the government expend about £60,000 a year on those in France.*

---

* Recrutement de l'Armée. Spectateur Militaire, 1848.

† Dr. Bowring gives 23*l.* 16*s.* 8*d.*, but this does not include the loss by desertion, *casualties, &c.*

Prussia has introduced a system of recruiting, which presents one of the most important features in the social economy of the Continent. By this system, every man, between the ages of twenty and twenty-five, is obliged to serve in the army; the only cases of exemption being, the only son of a parent unable to support himself, and some noble families who, under the German empire, were exempted from military service. The term of service is for three years; except in the infantry, where it is one year and a half: a certain class, chiefly students, are allowed to serve one year, on condition that they pay for their own support. The annual expense to the State, per man, is about 23*l.*

---

* Observations sur la Cavalerie, par M. Peyronny. Lieut.-Gen. Oudinot, Remonte de l'Armée.—Spectateur Militaire, 1842. Rapport au Ministre de la Guerre sur les Ressources Chevalines de l'Algérie. —Spectateur Militaire, 1848.

A board of officers from each branch of the service determine into what part of the army the recruit shall enter.

After his three years' service, the soldier is allowed to go on leave, until his twenty-sixth year, when he is put into the army of reserve, and into that division of it which is first for service: this is the real Prussian army; the standing army being but a military school for the population. The army of reserve is called out for drill every year, for a fortnight or a month. After his thirty-second year, the soldier is turned over to the second division of the army of reserve: in event of a war, this division would not take the field, but do garrison duty. After his fortieth year he is placed in the *Landsturm*, which never leaves its own district, and is only called out in case of actual invasion.

Thus, every man, in every station of life, and in every locality, is, in Prussia, a drilled soldier, who knows his regiment and his company, and appears under arms at his rendezvous for duty, with as little delay or confusion, and as complete in all military appointments, as a soldier of any standing army quartered in cantonments.[*]

The remounts for the cavalry of the army of reserve are wholly provided by the several provinces themselves, without any dependence upon external resources; and are furnished under the superintendence of the several provincial authorities, in virtue of the regulations laid down by the war department. Many of the districts have lent a ready hand towards improving the breed of horses, and have formed associations for that purpose.[†]

[*] *Laing's Prussia.*

[†] United Service Journal, 1843.

Bavaria, Wurtemberg, and all the smaller German powers, have adopted the Prussian system.

Russia, with a population of nearly 50,000,000 in Europe alone, scattered over immense tracts of wild and desert country, has no particular system of recruiting: an imperial ukase orders the levy of all peasants of a certain age, or else so many per cent.; the only conditions being that they possess good constitutions, that they be of requisite height, and not less than eighteen, or more than forty years of age.

The nobles have to send the required number of serfs, free of expense, to the appointed depot. Every serf becomes free on his joining the army; but, in case of desertion, he is again enslaved.

It is found that a levy of two out of every 500 males produces a supply of about 90,000 men.*

Substitutes are allowed; and this may be effected by mutual consent, provided that the noble be informed of it, and is not opposed to it. Those men who remain in the army, after their term of compulsory service, receive many advantages: exclusive of the retiring pension they are entitled to, they receive double pay; and, after five years' voluntary service, a pension equal to three times their original full pay.

Horses, in Russia, are very abundant: generally speaking, they are coarse and ill-shaped, though hardy and active; in the southern provinces, from whence the cavalry horses are brought, the breed is very superior.

Besides her regular troops, Russia has vast resources for her light cavalry, in the numerous Tartar tribes from whom she exacts military service; she also possesses a system of military colonies, differing but slightly from the Austrian military frontier. They were established in the year 1818, at the suggestion of General Araktcheiew. The object was,—to create a military force at the least possible expense, by ingrafting military service upon the agricultural labours of the peasant. For this purpose, certain districts, belonging to the crown, were selected for the infantry, in the environs of Lake Ilman, in the government of Novgorod; and, for the cavalry, upon the banks of the Bog and Dnieper. The territory was distributed among the peasantry at the rate of about forty-five acres of arable land to each head of a family; villages, on a uniform and improved plan, being, at the same time, erected for their accommodation at the rate of one village to each squadron. The stock and implements, necessary for the cultivation of this land, are furnished to the colonists by the crown: the colonist is charged with contributing to the common magazine of the village, keeping up the roads, &c.

---

* M'Culloch, Geog. Dict.

The surplus produced, after the outgoing and the provisions for his family are deducted, are at the colonist's disposal. A soldier is assigned to each colonist, to be maintained by the latter; but the soldier is obliged, when not on duty, to assist the colonist in the labours of his farm. The colonists, as well as the soldiers, are deprived of their beards, and wear a uniform; everything within the colony being subject to military law.

The male children of the colonists are all brought up to be soldiers, and form the recruits of the regiment belonging to their district; the number of recruits to be furnished by the villages being eight per 1000 souls. Exclusive of the soldier, there is, in each house, a supernumerary, generally a son of the colonist, who takes the place of the soldier, in case of sickness or death.

The Russian government appears inclined to give greater extension to this system of colonies. Possessing upwards of twenty cavalry regiments already permanently established, new divisions are to be formed in Kief, and Podolia; the estates of Prince Czartoriski, Counts Sobauski, Potocki, and others, which have become forfeited to the crown, being made use of for this purpose.*

---

* *Statistique Militaire.* Spectat. Milit. 1842.

In Sweden, the army is divided into three parts: the Vaerfvade (pronounced Verbede), the Indella, and the Bevœring. The Vaerfvade is the standing army recruited by voluntary enlistment: they receive pay, and serve from three to six years. They form the foot and horse guards, the artillery, and engineers, numbering altogether about 7000 men.

In the year 1680 and 1682, Charles XI., in concert with the states of the kingdom, prepared and promulgated the *Indelningswerket.*

The countries, through subdivisions of land, were divided into numerous small properties named Hemman, Mantal, or Garde; but, at the same time, these names by no means determine the size of these lands. By this law of Charles XI., two Hemmans formed a Rota, which Rota had to furnish a soldier. The Rota gives him a house and land termed Torp, labour for his fields, his pay, and undress. The cavalry of the Indella is furnished by proprietors of certain lands called Rusteholl. These proprietors have to furnish a complete horseman, and pay him; the contract being between man and man. There is no limit to the Indella service: they muster and drill twenty-one days in the year; this force amounts to about 29,000 foot and 4000 horse. The Bevœring are a kind of militia consisting of every man from twenty to twenty-five years of age capable of bearing arms; and are officered by officers from the Indella. They drill fourteen days a year, and number about 95,000 men.*

The British army is recruited by voluntary enlistment,† with a bounty, for a term of years; at present, the term of service is twelve years for cavalry and artillery, and ten for the infantry; but no soldier is allowed to reckon his service under eighteen years of age, and, at the expiration of his term of service, he may enlist again.

---

* Jacobi on Swedish Artillery.

† On account of the length of colonial service to which every soldier is subject, no other system would be possible.

The number of men to be maintained is a question of state policy, decided by the cabinet, submitted for the pleasure of her Majesty by the Secretary of State for war and the colonies, and brought under the notice of Parliament by the Secretary at War, upon the responsibility of her Majesty's confidential advisers.

Pensions are granted to soldiers for good conduct, length of service, wounds received in action, and disabilities contracted in the service. For private soldiers, the pensions vary from sixpence to two shillings a day; and for non-commissioned officers, from ninepence to three shillings and sevenpence halfpenny per day.

The most able-bodied pensioners from the age of forty-five to fifty-five, form a body called the enrolled pensioners, numbering 15,000 men. They are furnished with arms and accoutrements; and, once a year, they assemble for fourteen days, to be exercised by the staff office of pensioners of the district to which they belong. Staff officers of pensioners are also stationed at the Falkland Islands, New Zealand, and Australia, where pensioners are encouraged to emigrate, free passage for themselves and their families being given them, together with a grant of land. At New Zealand, there are upwards of six companies formed.*

On account of the numerous colonial dependencies of England, and the great extent of her possessions, in all parts of the world, the British government has endeavoured, as much as possible, to form local corps. In the West Indies, there are three regiments of negroes, chiefly liberated slaves, who do duty in the West Indies. They are enlisted for life; but are generally pensioned after twenty-one years' service. On the Gold Coast, there is a corps of native blacks, enlisted for five years. There is a regiment of Malays, of three battalions, recruited at Singapore, and doing duty at Hong-Kong and Ceylon: they make excellent marksmen.

---

* *Report of Army* Expenditure, 1849.

At the Cape of Good Hope, there is a corps of mounted Hottentots; and, also, a large body of Fingoes, kept in English pay. Lately, the government has endeavoured to form a sort of military colony on the country bordering the Caffre tribes. Liberal grants of land are offered to officers and men who are inclined to settle there; but they are liable at all times to be called out for military service.

At Malta, there is a native regiment officered by native officers. In Canada there is a local rifle corps, doing duty chiefly along the borders of the United States.

No country possesses greater means for mounting her cavalry than Great Britain; but the great expense occasioned by this branch of the service,—the average price of a horse, before he is fit for use, being about 60*l*.*—has prevented her from ever keeping up a large cavalry force. This, however, is partly remedied by a volunteer cavalry, termed yeomanry, which, with a little instruction, would be a very valuable force in case of any invasion, as it would save the regular cavalry much fatigue, with respect to escorting convoys, &c. The militia, which was formerly a very efficient and numerous force, has not been embodied since 1815.

Germany, divided into thirty-eight independent states and cities, formed an association termed the Germanic Confederation, whose object is the maintenance of the security of Germany, internally and externally, and the assertion of the integrity and independence of the respective German states. Each state must furnish an armed force, calculated according to the population; that of the whole confederation being, in 1838, nearly 39,000,000 inhabitants. The contingents make an army of 400,000 men, formed into three divisions: the first is the army on service, the second a reserve, and the third a depot. The strength of these several divisions is determined by the Diet of the confederation, which is held at Frankfort-on-the-Maine. They are, besides, divided into ten *corps d'armée*, which, in war time, are given a commander-in-chief.

---

* Report of Army Expenditure, 1849.

This confederation, on account of the political discords of the larger German powers, is becoming daily of greater importance.*

The following tables will better elucidate this system.

---

* M'Culloch, Geograph. Dict. Spectateur Militaire, 1843.

TABLE OF THE ARMY OF THE GERMANIC CONFEDERATION.

NO. OF THE CORPS D'ARMÉE.	DIVISIONS.	NAMES OF THE STATES.	CONTINGENTS, at $\frac{1}{100}$ of the Population.	PROPORTIONS OF THE CONTINGENT.					FIELD ARTILLERY, 2 guns per 1000 men.				Proportional contribution towards military expenses of £1000.
				Chasseurs, $\frac{1}{20}$ of the Line.	Line.	Cavalry, $\frac{1}{7}$ of the Contingent.	Artillery.	Pioneers and Pontooniers, $\frac{1}{100}$ of the Contingent.	Howitzers.	GUNS. 6-prs.	GUNS. 12-prs.	Total.	
1, 2, 3	6	AUSTRIA	94822	3675	69826	13546	6827	948	48	96	48	192	324·33
4, 5, 6	6	PRUSSIA	79484	3081	58548	11355	5705	795	40	80	40	160	263·48
7		BAVARIA	35600	1380	26215	5086	2563	356	18	36	18	72	118·01
8	1	WURTEMBERG	13955	544	10275	1994	1005	141	7	14	7	28	46·26
	2	BADEN	10000	388	7363	1429	780	100	5	10	5	20	23·15
	3	GRAND DUCHY OF HESSE	6195	240	4562	885	446	62	3	6	3	12	20·53
9	1	SAXONY (KINGDOM)	12000	405	8837	1714	864	120	6	12	6	24	39·77
	2	ELECTORAL HESSE	5679	220	4182	811	409	57	3	6	3	12	18·81
		NASSAU	4039	187	3534	„	281	37	3	6	3	12	10·03
		LUXEMBOURG	2536	98	1868	362	183	25	2	2	2	6	8·46
10	1	HANOVER	13054	506	9612	1865	940	131	14	28	14	56	43·26
		BRUNSWICK	2096	81	1544	299	151	21					6·27
	2	HOLSTEIN LAUENBURG	3600	140	2651	514	259	36					11·93
		MECKLENBOURG-SCHWERIN	3580	139	2636	511	258	36					11·86
		MECKLENBOURG-STRELITZ	718	30	558	71	52	7					2·38
		OLDENBURG	2829	132	2518	„	157	22					7·31
		LUBECK	407	16	300	58	29	4					1·34
		BREMEN	485	19	357	69	35	5					1·60
		HAMBURG	1298	50	957	185	93	13					4·29

INFANTRY DIVISION OF RESERVE.

Number of Divisions, and by what power inspected.	Numbers of Battalions.	Names of the States.	Contingents.	Where Garrisoned in time of War.	Proportional Contributions of £1000 towards Military expenses.
1st. **Austria.**	1	Saxe Altenburg	982	Mayenz	3·24
	2	„ Cobourg Gotha	1116		3·69
	3	„ Meiningen	1150		3·81
2nd. **Prussia.**	4	Saxe Weimar	2010		6·66
	5	Anhalt Dessau	529		1·74
	6	„ Bernbourg	370		1·22
	7	„ Cæthen	325		1·08
	„	Hesse Hombourg	200		0·66
	8	Waldeck	519	Luxemburg	1·71
	9	Lippe	691		2·27
	„	Schaumburg Lippe	240		0·79
3rd. **Bavaria.**	10	Schwartzburg Sondershausen . . .	451	Landau	1·50
		„ Rudolstadt	539		1·77
	11	Hohenzollern Hechingen	145		0·47
		„ Sigmarigen	356		1·17
		Liechtenstein	55		0·16
	12	Reuss, elder branch	223		0·71
		„ younger branch	522		1·71
	13	Frankfort	693	Disposable	1·57
		Total	303,493 men.	594 guns.	
		Reserve	101,181 men.	300 guns.	
		Grand Total.	404,667 men.	894 guns.	

CHAPTER III.

ON THE HISTORICAL DEVELOPMENT OF TACTICS.

TACTICS is the science of placing and manœuvring troops, in presence of the enemy, so as to make the greatest use of each branch of the service.

The general principle of tactics consists in placing in action, at the most important points of attack, a stronger force than that of the enemy.[*] For, a general who, by the rapidity of his movements, or by the cleverness of his manœuvres, can place in action, at the same time and at the principal point of attack, a greater amount of physical force than the enemy (the troops being equal in valour), will necessarily gain the victory.

At the battle of Meeánee, the wings of the Belooch army rested upon large Shikárgáhs[†] extending a considerable way on each side of the plain in front, so as to flank the British line on both sides when it should advance. The Shikárgáh on the enemy's left was very extensive, and enclosed towards the plain with a wall, having one opening, not very wide, about midway between the Belooch position and the British line; and there were 6000 infantry posted with the design of rushing out through the opening, upon the flank and rear of the British troops, after they had advanced to the attack. Finding that there were no loopholes in this wall, which was nine or ten feet high, Sir Charles Napier immediately ordered Captain Tew, of H.M. twenty-second foot, to block up that entrance with his company, and never give way. The great disparity of numbers was thus abated, and the action of 6000 men paralysed, by the more skillful action of only eighty. This was a striking application of military tactics.

---

[*] Jomini, Traité des Grandes Oper. Milit., vol. i. chap. vii.

[†] "A Shikárgáh is a large extent of ground, much wooded, generally *enclosed* with a ditch or a wall."—Napier's Conquest of Scinde, part ii.

The means of putting tactics into execution are manœuvres, or choice of a system of attack.*

A system of warfare is the habitual practice of certain manœuvres, under certain circumstances. It will differ in all armies, as it must be based on the character of the nation making use of it, and be suited to the nature of the country where the war is carried on.

A quick and impetuous people should look upon firing, and, especially, that of closed ranks, as but a secondary object; it should endeavour to put rapidity into its movements, rather than a steadiness which would deprive them of this advantage: such is a system of attack which will always suit the French. On the other hand, a nation of cool and steady temperament should endeavour to bring to perfection the fire of its infantry, and regulate its manœuvres. The British army afforded a brilliant example of this, on the 18th of June, 1815, when formed into compact squares, in the plain between the village of Mount St. John, and the wood of Hougoumont. To attain this compact formation, they had doubled and re-doubled their ranks several times. The artillery fire of the French Imperial Guard at point-blank range, and the successive charges of their cavalry, were unable to break through the immovable mass of the British infantry; and one would have been tempted to think it had taken root in the ground, if the battalion had not stirred majestically after sunset, when the arrival of the Prussian army proved to the Duke of Wellington that, thanks to the force of inaction and to his having understood how to manœuvre brave men, he had won the most decisive victory of the age.*

---

* Jomini, Traité des Grandes Opér. Milit., vol. i. chap. vii.

It is only by constantly practising infantry in firing at a mark, and by frequently manœuvring it in heavy marching order, that it can be made to acquire that indispensable skill and inurement to fatigue which will prevent its being wasted away at the beginning of a campaign. As for cavalry and artillery, their organization alone prescribes that they should be thoroughly instructed, and broken in to all kinds of manœuvres: for, in those battles which take place at the present day, extending sometimes over many miles of ground, large masses, consisting of numerous battalions or squadrons, are only capable of acting together from the particular instruction of each individual composing them.

Troops imbued with the habits of order and discipline; who can form column and deploy rapidly, disperse as sharpshooters, then rally in an instant, and fire steadily; such troops, led by commanders who are accustomed to adapt their manœuvres to every kind of ground and every variety of circumstances, may perhaps sustain reverses: but still the honour of the service will be saved, and their success will be immense as soon as they are led by a talented general.

The science of tactics necessarily depending upon the nature of the weapons made use of, has much altered since the introduction of gunpowder, and has progressed gradually, as fire-arms have been brought to perfection. Even the Turks, who, till lately, preserved the system of tactics which had rendered them formidable during the fifteenth and sixteenth centuries, have at last felt the necessity of abandoning it, and adopting a system more suited to the present age.

Gunpowder is generally supposed to have been discovered in the east many centuries before it was used in Europe;† but the careful researches which have, of late years, been made into eastern antiquities,* go far to prove that, though some combination of sulphur and saltpetre must have been known for ages in India and China, yet, what we understand as Gunpowder, viz., a chemical explosive combination, of saltpetre, sulphur, and charcoal, in certain determined quantities, is of Arabic or rather Moorish origin. During the darker ages, Arabic was the language of science; and the Arabic schools of Spain were the resort of the learned men of Europe. Chemistry was a science high in repute amongst the Moors, and the Arabian Works on this subject formed the basis of the studies at the Sorbonne of Paris. Amongst the scholars who frequented this celebrated college in the earlier part of the thirteenth century, was Roger Bacon, a student from Ilchester in Somersetshire. His rapid progress in all parts of learning caused him soon to be looked upon as the glory of that university; and, at the age of twenty-six, he returned to England with the degree of Doctor, when he became a Franciscan monk. In the year 1267, Friar Bacon published his Opus Majus, wherein he gives a detailed account of the proportions of gunpowder; but, although he is the only authentic writer of the thirteenth century who has made mention of its component parts, there can be no doubt that he was merely mentioning what was generally known amongst the philosophers of that age; for Albertus Magnus, in his treatise "De mirabilibus mundi," mentions likewise, about the same time, certain compositions having a strong analogy to that substance. Chemical compositions to produce combustible matter had always been in vogue in the south of Europe; and, though known under the general name of Greek fire, they often differed materially. Anna Comnena says that this fire was made from pitch and other gums from trees, mixed with sulphur, and the whole ground together. From Procopius† we learn that there was a mixture in use, of naphtha, sulphur, and bitumen. Andres * quotes a certain Al Marco, secretary to Al-málik-al-Salki, sultan of Egypt in 1279, as speaking of a kind of missiles, which he calls "scorpions," and describes as winding in their course with a thundering noise, "for so," he says, "these scorpions twisted themselves, being set on fire by means of saltpetre, which makes them burst like thunder." We have, therefore, two components of powder in connexion with the combustible engines then used in warfare. But it was many years before its propelling power became known. This discovery has been imputed, by tradition, to a certain Berthold Schwartz; but who he was is uncertain. Some say he was born at Fribourg, others at Cologne, in Denmark, &c.; that he was imprisoned at Venice in 1376; and that, in 1380, by order of Winceslaus, he was placed on a barrel of powder and blown up as punishment for his sorcery. He was most probably a German, learned in gunnery, who improved that of the Venetians. Many authors gravely assert that guns were used by the Saracens against Louis IX. so early as 1248; although Joinville takes the trouble to explain the nature of the Saracens' artillery, and says, "they opened a very quick fire upon us with balls made of the Greek fire." They were discharged from cross-bows, and an engine called *la perriere*, "a terrible engine to do mischief. From it they fling such quantities of Greek fire, that it was the most horrible sight ever witnessed." And his authority is supported by an Arabian manuscript of Gemál-ed-Dín Abú-l-muássan Yúsuf,† who relates that, in 1248, Sálih Nejm-ed-Dín, prince of Egypt, besieged the town of Hems with thirteen battering rams; one of which was of a most extraordinary size. There can be no doubt that guns were not used till about the beginning of the fourteenth century: and Petrarch confirms this, when he writes, "I am astonished that thou also dost not possess those brazen globes which, impelled by fire, start off with a horrible noise.

---

* Foy, Guerre de la Péninsule, vol. i. part ii.

† *Schlegel's* Philosophy of History.—Bohn's Edition.

---

* Wall on the Orthography of the Jews.

† *De Bello* Gothico, c. ii.

---

* Biblioteca Arabico-Hispana.

† *Johnes' Translation of Joinville, vol. ii.*

Was it not sufficient for the anger of an immortal God thundering from the skies; but must a fragile human being thunder on the earth? .... This scourge was, till lately, so scarce as to be looked upon as a prodigy; but now, that men's minds are apt for the most wicked deeds, it has become common, and is made use of as much as other weapons." *

The first authentic mention made of the use of cannon, is at the siege of Zurita, in 1331; where the king of Granada is said to have had a quantity of iron bullets, discharged by fire.

In records lately discovered, mention is made of a considerable weight of gunpowder, termed *pulvis pro ingeniis*, being supplied to the English army subsequently to its landing at La Hogue in 1346; and that, before the siege of Calais, Edward III. issued orders to certain officers of state in England, requiring them to purchase as much saltpetre and sulphur as they could procure.†

Owing to their cumbersomeness, cannon were of more frequent use in the navy, than with the armies in the field: and we find that, among the stores of the hulk *Christopher*, of the Tower, in June 1338, there were three iron cannon, with five chambers; and, in the barge *La Marie de la Tour*, was one iron gun with two chambers, and another of brass, with one chamber.‡

Towards the end of the reign of Edward III., cannon had become commonly used in the navy; § and in the year 1372, we find that 184 pounds of gunpowder were made from 135 pounds of saltpetre and 49 pounds of sulphur-vivum; and, though the proportion of charcoal is not stated, 400 faggots of willow were bought, from 1372 to 1374, for the purpose of making powder.*

---

* De Remediis Utriusque Fortunæ, 1645, Geneva, lib. i., dial. 99. p. 303.

† Transactions of the Antiquarian Society, March, 1848.

‡ Hist. of Royal Navy, by Sir Harris Nicolas, Appendix, vol. ii. It would appear, from this description, that the guns were of the breech-loading system, and that spare chambers were supplied.

§ Prince Louis Napoleon, in his Étude sur l'Artillerie, revives an old discussion as to whether Edward III. had cannon at Crecy or not; and supports the opinion of Villani, as to the English army having these cannons, by a manuscript Froissart found at Poitiers, where guns are also mentioned. But manuscripts were so frequently altered when copied, that, most likely, the person who had copied the Poitiers copy, having read Villani, put in the account of the *cannon himself*; but Prince Louis Napoleon justly

About the beginning of the fifteenth century, cannon were placed on wheel carriages; but they were for a long time afterwards still of so clumsy a make, and so cumbersome, that it was with difficulty they could be moved; for we find that, at the siege of Pontoise, in 1441, by Charles VII., king of France, he was unwilling to leave his position, and engage the English forces, who seven times reinforced the place, and offered him battle, as he would have been obliged to leave behind him all his bombards, and other artillery.†

For the next two centuries, artillery made but a gradual progress, and, from their great size and weight, the guns then used were often a serious hindrance to the operations of an army. During the Thirty Years War, however, Gustavus Adolphus formed a field-artillery of three, four, six, twelve, sixteen, and thirty prs. The guns were of bronze, cast-iron, and of iron plates bound round with leather. A certain number were attached to each regiment of infantry: these were very short and light, and were drawn either by a single horse or by men. "The leather guns," says Chemnitz, "were of the greatest use to him, against the Poles and in Prussia; as were likewise, a little later in the German war, the short regimental pieces, with large bores, which generally were loaded with grape."

Portable fire-arms remained as long in their infancy as heavy artillery. Culverines,‡ the type of the present musket,

---

observes, that, even if he had these guns, they could not have been so effective as three muskets of the present day, and had no effect in the victory.

* Hist. Royal Navy, by Sir Harris Nicolas, vol. ii., Appendix.

† Chronique de Jean Chartier.

‡ *They were first* [illegible] so, but afterwards hackbut, or harquebuss.

had been invented towards the end of the fourteenth century; they were fired with a slow match; and, later, by means of a spring, furnished with a match. They were first introduced into England by a body of Flemings in the pay of Edward IV. in 1471. For this inconvenient weapon, seldom used, was substituted the harquebuss, fired by means of a pyrite wheel lock, invented at Nuremberg, in 1517. This lock consisted of a small steel wheel, fixed against the plate of the lock of the harquebuss; and it had an axis that pierced it in its centre; at the interior end of this axis which went into the lock, a chain was fastened, which twisted round it on the wheel being turned, and bent the spring by which it was held; to bend this spring a key was made use of, into which the exterior end of the axis was inserted. By turning this key from left to right, the wheel was made to revolve; and, by this movement, a little slider of copper, which covered the pan with the priming, retired from over it; also, by the same movement, the cock, armed with a flint like the cock of a fusil, was in a state to be discharged by pulling the trigger with the finger; the cock then falling on the wheel, produced fire, and communicated it to the primage.* This was a great step towards the hammer of the present musket-lock: but the length of time required for loading, its bad workmanship, and the frequency of its missing fire, prevented the infantry from making use of it; the cavalry alone adopted it, (as the harquebuss with the match was even more inconvenient,) and to it, pistols † with wheel-locks were added.

The Spaniards, who, in the reigns of Charles V. and Philip II., fought with success in Italy, Germany, Flanders, and France, were armed with a harquebuss of a heavier calibre than those in general use; this they used with a rest; and could pierce the thick armours then worn as a protection against fire-arms. This weapon was shortly afterwards known by the Spanish name of musket; it was very heavy, carrying bullets seven to the pound.* Besides the musket, a smaller harquebuss had been adopted, and which, being more portable, was fired without a rest. In 1618, in the Low Countries, the harquebuss fired bullets twenty-four to the pound, whilst those of the musket were ten to the pound. In France, the harquebuss fired thirty-two to the pound. The charges of powder were put into little boxes of wood, suspended to a leather belt, termed bandelier; the bullets were in a small leathern sack; and, at the moment of loading, the soldier put some three or four in his mouth.

---

* See Encyclopédie, Paris, 1782; Arts et Métiers, *art.* Arquebusier.

† Some say, so called, from being invented at Pitoye, in Tuscany others, from Pistoya, in Spain.

Although the cavalry was then but a very inefficient body, it would yet have had too great an advantage over an infantry so badly armed, if the latter had not preserved the long pikes of the middle ages, with which, at first, two-thirds, and, at a later period, one quarter of every battalion were armed. The musketeers were placed on the flanks, and the pikemen in the centre, when receiving cavalry; or, two ranks of pikemen kneeling, protected the musketeers who fired over their heads. But the manœuvres of the infantry were very complicated: sometimes, when the front rank had fired, they broke off to the right and left, so as to allow the second rank to fire, and so on; at other times, the first rank having fired, laid themselves flat on the ground, the second rank fired and knelt, and the third bent their heads to allow the fourth rank to fire. They formed into squares, pentagons, octagons, four-pointed stars, squares of pikemen throwing out the musketeers at the angles, in echelon, &c. However, about 1630, a firelock, the original of the late flint-lock musket, termed *focile* (from whence the term fusileer),† was invented in Italy, which dispensed with the lighted match; but it was not much made use of till the year 1671,‡ when the French equipped a regiment of Fusileers with daggers, the handles of which could be screwed round the muzzle so as to allow of firing, whilst still retaining the blade fixed; this weapon was termed a bayonet, from having been invented at Bayonne, and effectually superseded the pike, until then in use. In 1703, by the advice of Marshal Vauban, the whole French infantry was armed with the firelock and bayonet. The consequence of this improvement was, the breaking up of the old deep formation, as there was no longer any necessity for the additional rows of pikemen; and, firing having become more certain, many more men would have been killed, had not the number of ranks been lessened.

---

* Étude sur l'Artillerie, par le Prince L. N. Bonaparte, p. 150.

† First known in England by the Dutch name of *Snaphance.*

‡ *Voltaire, Siècle de Louis XIV.*

In the reign of Charles VII. of France, the men-at-arms, or cavalry armed at all points, were organized into companies of a variable strength; men and horses were covered with thick armour, and had, for offensive weapons, lances from sixteen to eighteen feet in length, a long sword for cutting and pointing, and an iron mace. Each man-at-arms levied from six to eight men, whom he equipped and brought into the field, by means of a heavy pay given him by the King. These formed the light cavalry of the company: and were, at first, armed with any sort of weapon; but were afterwards united under the term of mounted harquebussiers, the harquebuss being their principal weapon.

This organization was adopted throughout the greater part of Europe. The man-at-arms, together with his followers, was termed the full lance. When charging, the men-at-arms were formed very deep: each rank being about forty paces in rear of the other, and those composing each rank, either close, or at a distance from one another; the harquebussiers, placed either in front or on the flanks of the men-at-arms, acting as skirmishers, or as light cavalry to follow up the vanquished. At a later period, they adopted another system of attack: each rank, galloping up successively, halted and fired, then retired to the rear of the squadron to reload. Speed was, however, not one of the attributes of this light cavalry, which was more heavily equipped than the cuirassiers of the present day.*

Much inconvenience resulting from those single ranks being drawn up one behind the other, which, when a charge failed, were an impediment instead of a help to one another, the idea suggested itself, that depth augments the power of resistance, and it became prevalent in the beginning of the sixteenth century. This false and dangerous notion, which annihilated all activity in war, caused the Emperor Charles V. to form his cavalry on a front of seventeen file, and the Duke of Alba, improving on this, adopted a front double the depth. The French, instead of feeling that the only way of rendering these heavy masses useless, was to manœuvre and take them in flank, or place still greater space between their own ranks, so as to make the most of the intervals, in their turn adopted the deep formation, persuaded that the defeats they had sustained at Gravelines and St. Quentin were owing to their system of single ranks; and from that time the men-at-arms lost those qualities which had made them so formidable.

The number of mounted harquebussiers increased greatly on the Continent, when the nobility, diminished and impoverished by the religious wars, were no longer able to procure the large horses required for the service of the men-at-arms. They were augmented to fifty men per company, and armed with a longer and heavier fire-arm, called a carbine; on the other hand, the men-at-arms augmented the thickness of their armour, in order to resist the fire of carbines and muskets, and seemed, as the French leader, La Noue, observed, to be covered with anvils instead of armour.

The Reiters, a German cavalry composed of mercenary troops armed and equipped at their own expense, made up for the deficiency of the men-at-arms. Attracted by the prospect of plunder, they fought in the civil wars of France and Flanders:

---

* *Hist. de la Milice* Française, par Le Père Daniel, vol. i. lib. 4.

they were mounted on horses of middling height, with less armour than the men-at-arms; and their weapons consisted only of a sword and pistols.

The mounted harquebussiers being too heavy a body to be made use of on many occasions, first gave the idea of dragoons: men who had no defensive armour, and who only carried a long musket attached to a leathern belt, and a sword. They consisted, at first, of infantry mounted on baggage or requisition horses; according to some, they owe their origin to the Duke of Brissac, in 1555; according to others, to the Duke of Parma, in 1582.

The lance was discontinued, in France, during the reign of Henry IV., partly on account of the scarcity of horses fit for this service, and partly because, since the death of Henry II., tournaments being abolished, the young nobility had lost the usage of this weapon. The Spaniards kept up a few companies of lancers for some time longer. Gustavus Adolphus took it away from the Swedes in the Thirty Years War. Among the Poles and Russians, it has always been a favourite weapon.

Thus, after the long wars of the seventeenth century, a cavalry had been created, which, founded on entirely false principles, and totally misunderstanding its proper strength, had abandoned the weapon of onset for that of fire-arms. Following up this false direction, its progress in the eighteenth century was but slow, in spite of the clever generals who commanded the armies of that period. Cavalry was still in an exaggerated proportion to infantry; and seldom obtained the success expected from its numbers. It, however, adopted some ideas more sensible than those of the preceding century: it disencumbered itself of the heavy armour, which only burdened the wearer, in the reign of our Charles I., and even went into the opposite excess; its depth of formation was diminished, being, in the reign of James II., only formed four deep. But, although several generals made the cavalry charge sword in hand, they still retained their pistols and musquetoon. Each regiment had its musketeers; some were entirely armed with this weapon, or with fusils. Dragoons had never been so numerous, and had never fought so often on foot. Exaggerating the principle, that one branch of the service should be supported by another, platoons of musketeers were placed in the intervals between the squadrons; and the two services were mixed together, thereby taking away all power of impulse from the cavalry, which was thus obliged to conform itself to the slow movements of infantry. It was in consequence of this prejudice of the seventeenth century, to which even Montecuculi yielded, that the Imperialists suffered so many defeats from the Turks.

The cavalry was not a manœuvring body; its movements were difficult and complicated; the horses were not trained; instruction was almost null; a charge had neither the steadiness nor the order which is seen at the present day; it was often made at a walk, and was always preceded by a firing of musketoons, &c.; the ranks were broken, and each man singled out his opponent.

The art of war made sensible progress under Turenne, Condé, Marlborough, and Prince Eugène of Savoy; their campaigns were remarkable for hardy conceptions, rapidity of movements, and scientific manœuvres on the field of battle. But the administration of the armies was bad; the higher grades were purchased; elementary tactics were still in their infancy; manœuvres were dangerous, because they were only formed slowly and in disorder. Troops were only instructed in puerile exercises; the most able generals were obliged to struggle against a thousand difficulties, unknown at the present day, and always counteracted in their plans by the ridiculous means then in use for the moving of armies. Discipline was altogether lost sight of in the beginning of the eighteenth century; patronage filled the higher ranks; infants were often made colonels of regiments; and evils only went on increasing. On reading the works of Marshal Saxe, one can hardly believe the picture of the disorders then existing among the troops. Count Drummond de Melfort says, that, before the war of 1740, the tenth part of French cavalry officers could not even ride; that ignorance prevailed in every branch of the service; that nothing was more rare than to see a regiment mount for exercise; and that a colonel would have incurred the displeasure of his officers, and been cried down throughout the army, had he ventured to make them do so. It was but a natural result of the actual state of things: captains were the proprietors and furnishers of their troops; and, consequently, disliked those duties which might damage their equipments.

In England, these matters were, if anything, worse; and its history furnishes us with a curious example of a Maid of Honour commanding a troop of cavalry—the beautiful Mary Lepell, who, in 1720, married John, Lord Hervey of Ickworth.

But Frederic of Prussia appeared, and, with him, a new system. Inheriting, in 1740, a well-organized army, into which Leopold, Prince of Anhalt, had introduced regularity of step, and the use of iron ramrods (things unknown elsewhere), as well as reduced to three ranks the formation of the infantry, Frederic, endowed with a genius for war and with an iron will, caused the science of tactics to advance with a gigantic step. Assisted by Saldern, Gandi, Ziethen, and the bold Seidlitz, the first cavalry officer of his day, he gave to his manœuvres a precision and a rapidity till then unknown. A column deployed, and an army was formed in line of battle, in a few moments. Under a new system of warfare, of which he was thus the originator, he astonished his enemies by the rapidity and order of his marches, the impetuosity of his attacks, and the steadiness of his infantry fire. The importance of the infantry was never doubted by the generals of the preceding century; but the use of cavalry being misunderstood, this branch inspired little confidence, especially in Germany, where the Turks had shewn a far better organized force. Folard, a great partizan for infantry, maintained that the infatuation of that time for cavalry would pass away. Charles XII. of Sweden, who perfectly understood the cavalry service, and knew how and when to make use of it, had drawn great advantage from it; but the career of that prince had been too short, for his instructions to spread far, or leave a durable impression. It was reserved for Frederic to teach Europe the advantage which an able general could obtain from cavalry. He caused it to discontinue the practice of firing when in line; he formed it two-deep, and made it charge at a gallop with the greatest order. Under the system which this prince introduced, cavalry was no longer placed at the wings of an army, with the infantry between; his light horse was no longer an irregular mass, but was divided in the field into corps of twenty, thirty, and forty squadrons; and, out of twenty-two pitched battles, the Prussian cavalry, well mounted, and ably led, decided the victory fifteen times.

Artillery had been greatly increased under Louis XIV., who founded artillery schools at Douai, Metz, and Strasburg.* Its proportion to the other branches of the service was much augmented during the Seven Years War. The pieces of heavy calibre, with their clumsy carriages, were unable to follow the troops in their manœuvres, which a new system of tactics had rendered so rapid. Cavalry, especially, perceiving the necessity of being accompanied by so powerful an auxiliary, felt a want of improvement in this branch. Frederic made the first trial of a horse artillery at the camp of Landshut, 1759; and, in 1762, the advantage of this invention was shewn at Reichenbach, where thirty-five Prussian squadrons, supported by a battery of ten light field-pieces, crossed the defiles of several streamlets, deployed close to the Austrians, and attacked them with success.

The Seven Years War offered an example of a sovereign struggling successfully against the three greatest powers of

---

* Voltaire, Siècle de Louis XIV.

Europe, although his dispersed provinces did not contain 6,000,000 inhabitants. His enemies admired him whilst they opposed him; and, at the peace of 1763, which terminated the war, they hastened from all quarters to endeavour to find out the cause of his success. Superficial men attributed it only to the iron discipline of his army, to the regularity of his manœuvres, to his oblique step, even to the style of his uniform. They were blind enough not to perceive that the genius of Frederic, and the inferiority of the generals opposed to him, had thrown into the balance a weight equal to that of his tactics, the mechanism of which had alone been observed, whilst the moving power had been overlooked.

The Prussian exercise, the manœuvres, all the minutiæ, and the severity of the service of Frederic's army, were imitated, and more or less closely copied throughout Europe, without regard to the national character of each country, and its system of recruiting. The French, who, under the direction of Marshal Saxe, had begun to improve their tactics, partook of this spirit of infatuation, and overstepped the boundary they wished to attain; their army was fatigued and disgusted by a multitude of changes in its organization and discipline, that eventually alienated them entirely from the government, and filled them with a revolutionary spirit.*

We have as yet seen the progress of tactics follow on that of fire-arms. The lock of the present musket, its iron ramrod, the invention of cartridges, and the improvement of field artillery, gave a rapidity to the fire of both musketry and artillery, which led to less depth of formation, while the invention of the bayonet caused pikes to disappear. Frederic taught how troops could be manœuvred with quickness and precision, and better combined on the field of battle; cavalry, especially, was nearly brought to perfection; artillery saw a new career opened for it. The French Revolution broke out; and this event, purely political, had, however, a singular influence upon tactics. This influence had no longer for its motive the perfecting of fire-arms; it was the political situation of France, and that of the other powers of Europe, which gave birth to these new tactics, or, rather, this new system of warfare, many features of which recall to mind the not very distant period, when men fought in thick battalions, bristling with pikes, and flanked by harquebussiers acting as skirmishers.

---

* *Thiers, French* Revolution.

The recruiting, which, until this period, fell in Europe only on certain classes, and the insufficient produce of which was made up by paid enlistments, became national in France; privileges disappeared, and every citizen could be called upon to serve. At first, enthusiasm, and, afterwards, revolutionary terrors and requisitions, hastened the young recruits to the frontiers, then all menaced by the enemy. The exigencies of the state rendered it necessary that these mere human masses (for the greater part of them were ignorant and undisciplined) should be opposed to the Prussians and Austrians, then the most skilful troops in Europe. It was therefore found requisite to make up by numbers what was wanting in discipline, and to replace instruction by a new system of warfare, which would stimulate boldness and individual activity. A warfare of sharpshooters was instituted, as one of the wants of the time; and this kind of attack, led by bold and active men, astonished an enemy accustomed to fire in line, and whose mode of recruiting supplied it with an inferior race of men. But this system of skirmishing, so convenient in the Alps and Pyrenees, was not adapted to the plains of Belgium, where the numerous cavalry of the allies had so much advantage; a system solid enough to resist this evil was required; a system which, disguising the danger from the greater number, was, at the same time, capable of inspiring them with military ardour, and of enabling them to advance to the attack without much previous instruction. This was obtained by making use of the close column employed by Prussia, and so much recommended by Folard.

The artillery of the Republican armies was greatly increased (by the abstraction of metals belonging to monasteries and private individuals), on account of the number of men unaccustomed to warfare, who were daily sent to the armies in the field, and who required the support of this powerful auxiliary, to inspire them with a confidence which they would not otherwise have possessed. Horse artillery, especially, so necessary in this system of warfare, and recruited from the best gunners in the foot artillery, had obtained remarkable success, not less due to its skill than to its boldness.

During the eighteenth century, the greatest improvements had taken place in the artillery service; and, in France, it had even occupied the attention of the Académie des Sciences. Jean Florent de Vallière, who commanded the French artillery from 1713 to 1759, had directed all his energies towards simplifying the armaments which were taken into the field; and, in 1732, gave them a complete organization. He was, however, a strong partizan for long guns of heavy calibre: this arose, partly, from his endeavour to unite the siege and field artillery; and, partly, from the extreme, into which the Danish and English powers had run, of using short light pieces, a circumstance to which, from the very short range of these pieces, he had imputed the British losses at Dettingen and Fontenoy. He was succeeded by his son, Joseph Florent, Marquis de Vallière; who strenuously supported his father's opinions, which were likewise defended by St. Auban, D'Arcy, and other eminent artillerists. But to Gribauval is due the honour of having opened a fresh career for artillery: he completely separated the field from the siege artillery; he diminished the service charges, from one-half, to one-third of the weight of the projectile, by which means he was enabled to introduce a shorter and lighter description of gun without much affecting the previous range.*

---

* About the beginning of the last century, several artillerists had deliberated as *to whether guns should* be cast hollow or solid. One

The field artillery was formed into 12-pounders, 8-pounders, and 4-pounders; to these was added a six-inch howitzer, with a charge which, though still slight, was yet greater than it had been.

Iron axletrees, higher limbers, and travelling trunnion holes, lightened the draught. The cartridge, the elevating screw, and the tangent scale, caused the firing to be quicker and more regular. The guns having been lightened, were given more solid carriages, of which the several parts were strongly bound with iron. Uniformity was established in the several arsenals; so that each separate part of the carriage, gun-limber, or waggon, had exactly the same dimensions given to it. This exactness enabled the artillery to take into the field ready-made spare carriages, and to possess a *matériel* which could be removed with a rapidity until then unknown.

In order to lessen the number of different kinds of gun-carriages, &c., Gribauval gave, as far as possible, the same dimensions to those of the same nature. There was a gun-carriage for each description of field gun, and each gun-carriage had a separate gun-limber; but the limbers of 12-pounders and 8-pounders had the same sized wheels. Seven kinds of wheels, and three of axletrees, were made to suffice for every description of field-carriage.*

The new system of warfare was not limited to these inno-

Maritz, who kept a foundry at Geneva, informed the Court of France, in 1739, that he had invented a method of boring brass guns and mortars which had been cast solid. He was immediately invited to France; and at first, at Lyons, and, afterwards, at Strasburg, secretly worked at boring pieces of all calibres, which, on trial, were found perfectly satisfactory. His secret was purchased by the French Government, who, consequently, for many years, had the monopoly of bored guns cast solid. The Marquis de Montalembert improved on Mr. Maritz's plan, and succeeded in boring cast-iron guns. See Mémoire d'Artillerie de St. Auban: it contains controversial papers on the merits of the De Vallière and Gribauval systems, with letters of Gribauval, &c. Buffon, Hist. Naturelle, Suppl., tom. iii. Académie des Sciences, 1764.

* Nouveau Système d'Artillerie de Campagne. M. Le Capitaine Favé, *1851.*

vations alone. The use of tents disappeared, it being found impossible to furnish them to so many troops; and they were replaced by the bivouac. As there was no money, magazines were no longer formed beforehand; the men lived from day to day, by requisitions of every kind; and, from these causes together, arose a singular rapidity in their movements.

The energy which animated the fresh levies, and which was unchecked either by routine or prejudice; the spirit of invasion of the Republican government, and the desire of propagating its principles; these causes, conjointly, soon made men familiar with events unheard of in former wars, and converted into a very simple affair what had hitherto appeared quite impracticable. Fortified places were left in the rear of an army without being besieged; the broadest rivers were often crossed in sight of the enemy; mountains supposed inaccessible presented no obstacles even to artillery. The plan of a campaign consisted no longer in the conquest of a province, or the taking of a town; the first move was for the possession of the capital; and, from thence, the remainder of the campaign was directed. The organization of armies into divisions, begun by Frederic, and introduced into France by Marshal Broglie, perfectly suited the new system; and the division was made more complete by being composed of each branch of the service; in order that it might engage by itself, if required, upon any nature of ground.

When General Bonaparte, on the 18th Brumaire, 1797, overthrew the Republican government, and usurped its powers, he established the most perfect order in all parts of the administration. The camp, which he established on the coast, in 1803, and where the troops were manœuvred a long time in masses; the institution of a military school for infantry, and the reorganization of one for cavalry at Versailles; rapidly spread instruction throughout the army. A corps of drivers was formed for the artillery; and the success of this service, no longer depending upon the cupidity of contractors, who had been used to hire to the state both the horses and drivers for the *matériel*, were thus secured.

Under the Empire, cavalry was no longer attached to the divisions of infantry; as it was found, that, when so much disseminated, it was unable to make any decisive charges. Part was attached to the *corps d'armées;* the remainder, formed into a separate corps of reserve, marched and fought in large masses. Its success was often very great; but more through personal valour than efficiency of arrangements. Double cuirasses were given to the heavy cavalry, which rendered them very formidable; on the other hand, the dragoons, of whom two duties were required, proved the falsity of the principle. Lances, which had reappeared for a short time in France under Marshal Saxe, came again into use, and their effects, in the hands of a few Polish regiments in the French service, were so remarkable, that six regiments of dragoons were turned into lancers.

The enterprises of Napoleon were on a larger scale than those of the Republican generals. His campaigns were shorter, their results greater. His vast strategical conceptions, often well understood and executed by generals who had commanded armies themselves, surpassed every thing which had been seen till then. With him, the destiny of an empire depended upon the success of a single battle; because no one equalled him in the art of discovering the feeble point of his enemy, of crushing him by the accumulation of all his strength upon that point, of pursuing him in all directions: because, in fact, no one understood, so well as he did, the science of strategy, or could unite so vast a *matériel* to execute his plans. Yet, under him, tactics made no progress; the manœuvres of infantry remained with all their imperfections; and it is remarkable that no regulations were introduced to supply the omissions which those of 1791 were reproached with, relating to the instruction of sharpshooters; indeed, with respect to this branch, the only means of success lay in the experience and tact of the officers and men. The manœuvres of the cavalry, revised in 1804, received provisionally some improvements; although leaving a great deal to be desired for the evolutions of their line of battle.

The wars of the Empire were extremely destructive both to men and horses; not only in consequence of the dispersion of the French troops over so great an extent of countries and variety of climates, but also from the prodigious number of the battles, the excessive rapidity of the marches, and, lastly, the helpless extent of the disorder, which exhausted the armies, and embarrassed their administration. Less care was taken about the organization of each service; it was forgotten that a well-chosen recruit is already half a soldier; neither was it remembered, especially in the Spanish war, that discipline is impossible where there are neither provisions nor pay, and that, under such circumstances, success could not be depended upon.

The instruction, which was so well carried out since 1804, disappeared, by degrees, in consequence of the constant renewal of the nucleus; the soldier, no longer receiving a primary instruction, was taken at once from his hearth to the active service of the field; and the army, badly recruited from a population enfeebled and discontented, at last afforded Napoleon only a handful of men to oppose to the efforts of allied Europe: his vigour had succumbed through the gigantic extent of his enterprises, and, from his not having been sensible of the ruinous expenditure which they had occasioned, of all the political and military resources, bequeathed to him by the Revolution.

Until the year 1794, tactics had made but little progress in the British army. After the time of Marlborough, Germany was the principal school for English officers; but, satisfied with the glory acquired in their campaigns, they seldom looked into the minutiæ of tactics: besides, the regiments with which they had served were usually disbanded on their return to

England; the few that were retained for home service being to a certain degree the properties of their colonels, and dependent on them, not only for the style of their accoutrements, but, also, the system of manœuvres. The results, however, of the campaign to Holland in 1794, drew the serious attention of the Duke of York to the subject. Numerous abuses were reformed, and, in 1798, Sir David Dundas caused a regular system of infantry evolution to be adopted throughout the army. The late General Sir William Congreve, ably assisted by the Marquis of Townshend, the then Master-General, not only introduced most of Gribauval's improvements of artillery, but caused both officers and men to undergo a proper course of instruction. Since then, the campaigns of Sir John Moore and the Duke of Wellington formed an excellent school for the commanding officers, and the foundation of the colleges of Woolwich and Sandhurst, by the breaking up of Marlow, has been the means of preparing a new generation to carry out the system of discipline and instruction so ably laid down by the veterans of the Peninsula.

TABLE SHEWING THE PROGRESSIVE ALTERATION IN ARTILLERY.

The first guns made use of, were but little better than portable fire-arms, the term *cannon* arising from their resemblance to a *canna* or reed; but, before the end of the fourteenth century, every kind of dimension had been experimented, up to those throwing stones of a thousand pounds weight. Giorgio Martini gives the following, as the guns used in his time:—

Name of Gun.	Weight of Ball.	Name of Gun.	Weight of Ball.
Bomb-ketch	224 lbs. stone.	Basilic	13lbs. bronze or iron.
Mortar	150 to 200 ,,		
Moyenne	37 ,,	Cerbatane . . .	1½ to 2lbs. lead.
Cortana	44 to 54 ,,	Espingard . . .	7 to 10lbs. ,,
Passe-Volant . . .	10 lead incased with iron.	Harquebuss . .	about 1 ,,
		Escopette . . .	$\frac{1}{50}$lb. ,,

At the same time, in France, there was the—

Name of Gun.	Number of Horses for Draught.	Name of Gun.	Number of Horses for Draught.
Double Courtaut 50-pr.	35	Medium Culverin 12pr.	7
Serpentine 24-pr.	23	Falcon 2-pr.	2
Great Culverin 16-pr.	17	Small Falcon 1-pr.	1

In the following century, the French and Italian were—

FRENCH.

	Name.	Weight of Gun.
	Great Basilic 80-pr.	8 to 9000 lbs.
	Double cannon 42-pr.	7000 „
	Serpentine 24-pr.	4000 „
Francis I.	Great Culverin 15-pr.	3500 „
	Bastard „ 7-pr.	2000 „
	Medium „ 2-pr.	1200 „
	Falcon „ 1-pr.	800 „
	Falconet „ 14 oz.	300 „
Henry II.	Cannon 34-pr.	5200 lbs.
	Great Culverin 16-pr.	4200 „
	Bastard „ 8-pr.	2500 „
	Medium „ 2-pr.	1500 „
	Falcon „ 1-pr.	800 „
	Falconet „ 14oz.	500 „

ITALIAN.

Name.		Weight of Gun.
Cortana of	19·9-pr.	1062 lbs.
„	29·8-pr.	1820 „
Bomb-ketch	66·4-pr.	2990 „
„	„	3655 „
„	99·6-pr.	4083 „
„	16·6-pr.	5910 „
Culverin	79·7-pr.	8637 „
Cannon of	79·7-pr.	8298 „
„	66·4-pr.	5825 „
„	33·2-pr.	2657 „
Culverin	33·2-pr.	4384 „
„	33·2-pr.	3780 „
Cannon of	19·8-pr.	„ „
Culverin	19·8-pr.	„ „
Cannon	13-pr.	1660 „
„	13-pr.	1460 „
Culverin	13-pr.	2860 „
„	9·2-pr.	1482 „
Passe-Volant	10·5-pr.	1820 „
Culverin	10·5-pr.	1166 „
Saker	6·6-pr.	932 „
„	7·9-pr.	1430 „
„	7·9-pr.	932 „
Aspic	7·9-pr.	866 „
Falcon	3·9-pr.	592 „
Falconet	2-pr.	266 „

In the seventeenth century, the Spaniards appear to have had the most simple artillery:—

SPANISH (1615.)

Name.	Weight of Gun.
Cannon, 40-pr.	7544 lbs.
Coulverin, 24-pr. . . .	4100 „
Bastard, 10-pr.	
Demi-Bastard, 5-pr.	

FRENCH (HENRI IV.)

Name.	Weight of Gun on its carriage.
Cannon, 33-pr.	8300lbs.
Great Culverin, 16-pr.	6300 to 6400 „
Bastard „ 7·5-pr. . .	4000 „
Medium „ 2·5-pr.	2200 to 2300 „
Falcon, 1-pr. . .	1000 to 1200 „
Falconet, 12oz. . .	700 to 800 „

THE VALLIÈRE SYSTEM (1732).*

		Weight of piece.
Guns	24-pr. . . .	5400lbs.
	16 „ . . .	4200 „
	12 „ . . .	3200 „
	8 „ . . .	2100 „
	4 „ . . .	1150 „
Howrs.	8 „ . . .	1200 „

GRIBAUVAL'S SYSTEM.

		Wt. of piece.
Guns	12-pr. . . .	1800lbs.
	8 „ . . .	1200 „
	4 „ . . .	600 „
Howrs.	6 „ † . .	500 „

* There were as yet no limbers, the ammunition being carried on carts.

† The howitzer being too light, was found very destructive to its carriage, and was therefore increased to 650 lbs.

CHAPTER IV.

INFANTRY TACTICS.

INFANTRY is the most important branch of an army; of which it constitutes the real strength: it is with their infantry that nations have conquered, and it is by the ruin of their infantry that these same nations have fallen.

It was to their infantry that the Swiss and Spaniards, during the sixteenth century, and the Swedes, during the seventeenth, owed their importance in Europe.

It was by their infantry, formed during the wars of the Revolution, and solidly disciplined in the camps of 1803 and 1804, that the French obtained their extraordinary conquests during the succeeding campaigns.

It is likewise to their infantry that the British owe the victories they have won in every part of the globe.

But though it may be said that, next to the talents of a general, infantry is the first instrument of victory, it must also be recognized, that it finds powerful auxiliaries in cavalry and artillery, without which it would often be much compromised, and never be able to obtain more than temporary success.*

The Ten Thousand Greeks, whom Xenophon led back from the expedition of the younger Cyrus, perceived, after a few days' march, that, without cavalry, their retreat would become most disastrous: they immediately formed a body of fifty horse, which they placed at the rear guard; and this small corps greatly facilitated their retreat.

---

* Jomini, Art de la Guerre, chap. vii.

The seven legions commanded by Crassus, harassed and surrounded by swarms of mounted Parthians, in the sandy plains of Mesopotamia, perished as soon as their feeble cavalry had been destroyed.

The victories of Rolica and Vimeira were rendered incomplete from the deficiency of cavalry; a deficiency from which British armies have too often suffered.*

Among all European nations, infantry may be divided into four classes; viz. grenadiers, infantry of the line, light infantry, and rifles.

Grenadiers are usually troops of reserve.

In the British service, both infantry of the line and light infantry receive an identical instruction, are obliged to perform the same duty, and are armed in the same manner; viz. with the percussion musket and bayonet: to these weapons the continental nations add the sword.

Rifles are employed where accuracy of fire is preferred to rapidity. The rifle made use of by the English has only two grooves, making a spiral turn in its length; the ball having a belt round it to fit in the grooves. Instead of a bayonet, riflemen are armed with a sword twenty-seven inches long, which fits on to the rifle, the same as the bayonet.

To be able to appreciate the effects of fire-arms in the attack and defence of infantry, it is necessary to understand the principles upon which they are made and constructed.

The construction of fire-arms is based on the principle of the expansive force of gases; and the object is, to obtain a weapon in which a certain quantity of confined gas will be able to exert its united force at one and the same instant. At present, the substance from which this gas is obtained is gunpowder.

When, by any means whatsoever, fire has been communicated to the charge of powder at the bottom of the bore of a gun, the powder, in igniting, decomposes rapidly into aeriform fluids, named gases. These gases, possessing very great elasticity, which is further increased by the high temperature to which they are submitted, endeavour to occupy a much greater space than that in which the charge of powder was confined; and, to do this, must force for themselves a passage. Having none other than the vent and the mouth of the barrel, and the vent being too small to allow of their expansion, it is necessarily by the mouth that they escape, throwing with violence to a distance the projectile which opposed their free passage. It is clear that, in this case, there is a considerable force of expansion produced by the decomposition of the ignited powder; which force, when applied to fire-arms, is termed force of projection.

---

* Well. Desp., vol. iv.

This force of expansion in gases acts in every direction at the same time; but, the sides and breech of the barrel offering a sufficient resistance, its action is principally shewn on the projectile. The resistance shewn by the latter is, however, sufficiently great to enable the gases to manifest their action in an opposite direction; that is to say, against the breech of the barrel, by forcing back this breech, and, consequently, the whole piece. This causes the motion termed recoil. The lighter the arm is, relatively to the projectile, the stronger will be the recoil. This is expressed in a more general sense by saying, that the force of the recoil is in direct ratio of the weight of the projectile and the resistance which it offers, and in inverse ratio of the weight of the piece.

It is also clear, that the force of the recoil must vary, all other forces being otherwise equal, in ratio of the weight of the charge; since the force of expansion arises from this charge.

If the projectile, independently of its weight, fits closely into the sides of the barrel, the recoil will be increased; and if the resistance which the projectile offers is greater than that of the sides of the barrel, the latter will burst.

The charge of powder, consisting of numerous particles, does not ignite in every part instantaneously; but the fire gradually communicates itself from one particle to another.* This communication is made with more or less rapidity, according to the quality and grain of powder; but, in every case, a certain time elapses before the gases, which are to be produced by the powder, entirely develope themselves. During this space of time, the projectile has, perhaps, given way before the expansive force of the first formed portions of gas, and advanced towards the mouth of the piece: the space, therefore, between it and the breech becomes greater and greater, and thus the projectile may have escaped from the barrel before the entire charge has been changed into gas. From this results:—

1st. That the effect produced upon projectiles, with powder of the usual kind, does not indefinitely increase in ratio to the increase of the charge; and that there is necessarily a limit beyond which an increase of charge will not produce greater force of projection, and even, in certain cases, will lessen it.

2nd. That the resistance offered by the projectile tends to assist the force of projection in assuming its entire strength: for the quantity of powder burnt at the first moments of ignition (that is to say, before the motion of the projectile has increased the space in which the gases are compressed) is greater in proportion to the time during which the projectile remains without motion. The gases have, consequently, time to accumulate in greater quantities, and acquire a greater force of distension.

The resistance offered by the projectile can be increased in two ways: firstly, by its weight; secondly, by its greater or less adhesion to the sides of the bore.

---

* A grain of powder, if exactly spherical, will, on ignition, spread fire in every direction, to a distance of eight times its own diameter. The diameter of the succeeding circle of fire will therefore be sixteen times the diameter of the grain; and, as this expansion takes place in every direction, it follows, that the ratio of the two volumes is as 1 to the cube of 16, or as 1 is to 4156: from whence it is calculated, that the powder, reduced to a state of gas through combustion, occupies a space 4000 times greater than it occupied *as a grain.*

The longer the barrel is, the longer time the projectile will take to travel; and, consequently, there will be a greater quantity of powder burnt, and of gas produced, previous to the projectile leaving the bore.

According to this theory, a greater length of barrel would ensure a greater force of projection. This is, to a certain degree, the case; but there is a limit to this length of barrel, beyond which other causes intervene, such as decrease of velocity, caused by friction of the projectile against the sides of the bore, and decrease of distension of the gases, caused by the increased space which they occupy.

When powder has been submitted to the action of fire, besides that part of it which turns into gas, there is a certain residue left, which, depositing itself along the length of the bore, occasions a foulness of the interior surface. This foulness naturally increases at every shot fired; and, if the diameter of the projectile were not less than that of the bore, the foulness would, after a certain number of shots, render all loading impossible. This foulness, therefore, makes it necessary that the diameter of the projectile should be smaller than that of the bore. This difference of the diameter of the projectile, and of that of the bore, is termed windage.

Windage possesses this objection, that it allows a portion of the gas to escape around the projectile, and thereby diminishes the force of projection; besides, it causes the projectile to make elliptical indentations within the bore, by striking against it, which in some degree alters its direction. This effect is produced in the following manner: When the piece is pointed at the object intended to be struck, and is ready to be fired, the projectile, through its own weight, reposes on the lower surface of the bore, leaving, between its own upper surface and that of the bore, a space equal to the windage. From this it results, that the first formed gases escape by this space, giving the projectile a pressure towards the lower side of the bore, as well as a motion towards the mouth of the piece. By a well known law, the projectile strikes back against the upper surface, and then again to the lower, till it leaves the bore, having assumed the direction given to it by the last indentation, which direction cannot be the same as the exact prolongation of the axis of the piece.

Windage therefore possesses the serious objections of decreasing the range and altering the aim, by diminishing the force of projection, and falsifying the direction in which the aim was taken.

Besides the force of projection, projectiles, in their flight, are acted upon by two other forces: gravity, and resistance of the air.

The force of projection tends to impel the projectile in an indefinite straight line, in a direction with the axis of the barrel.

The direction of gravity is perpendicular to the surface of the earth.

The resistance of the air tends constantly to lessen the motion imparted to the projectile by the force of projection. This resistance of the air is always acting in a direction opposed to the motion.

It has been demonstrated, by a series of careful experiments, that—

1st. The force of projection is a force which can act but once, and cannot be renewed.

2nd. That the force of gravity is a constant force, and becomes more active at every moment of motion.

3rd. That the resistance of the air is also a constant force; and that it increases or diminishes, according as the velocity increases or diminishes.

The resultant of these three forces, is a motive force, diminishing in velocity at every instant, and causing the projectile to describe a curved line in its flight; the incipient point of the curve lying in the axis of the bore of the piece, and its continuation gradually diverging in the direction of the attraction of gravity, till the projectile obeys this latter force alone. This curved line is termed the trajectory; and will necessarily depend, as to its curvature and range,* on the inclination given to the axis of the piece.†

The charge is concentrated in the breech of the barrel, which therefore demands a greater degree of thickness at this point than at the muzzle, as more strength is there required to resist the explosive force. Besides, it would be impossible, without this condition, to strike an object by aiming directly at it; for if the exterior of the barrel were cylindrical, the ball would strike below the object aimed at, at a point equal to the thickness of the barrel at the muzzle, added to the fall of the projectile in its flight. But, the barrel forming a truncated cone at the exterior, whilst the interior is cylindrical, the projectile cannot follow the line which the eye of the marksman directs at the object: its direction cuts this line, in the first instance, near the muzzle, passing over it; and then, nearing it through the effect of gravitation, it cuts it again a second time, in a point termed point-blank. Thus, when the object aimed at is at a distance known to be the point-blank range of the piece made use of, the marksman should point his aim direct; if the object lie between the first intersection and the point-blank, he should aim below; if further than the latter point, he should aim above.

The point-blank range varies, according to the exterior and interior dimensions of the barrel, the windage and weight of the projectile, the quantity and quality of the powder, and the degree of inclination which the marksman gives to his musket; but, for practice, the axis of the bore is supposed to be parallel to the plain. However, as, in action, the musket has the bayonet fixed, the barrel becomes to a certain degree cylindrical, and point-blank range exists no longer: the men must therefore always aim above the object which is to be struck; and, although this inconvenience is but little felt when firing at masses, yet it becomes real when the fire is directed at sharpshooters.

---

* The range is the length of the straight line drawn from the mouth of the piece, to the point where the projectile strikes the ground perpendicularly.

† Instruction théorique et pratique sur le Tir des Armes-à-feu; en usage dans les régimens d'infanterie. Paris, 1845.

From experiments made in France (1822), with muskets having their bayonets fixed, it was proved, that, in order to strike a man in the breast, the soldier should aim as follows:—when at a distance of 100 yards, straight at the breast; from 100 to 150 yards, at the shoulders; from 150 to 190 yards, at the head; and from 190 to 210 yards, at the top of the shako. Thus infantry is only formidable at about 100 yards; for one would never induce a soldier when in line, nor even, without difficulty, a skirmisher, to fire otherwise than at the head or breast of the enemy: it follows, therefore, that there must be a prodigious number of waste shots; not only from want of practice, but also from a false estimate of the range, nervousness, &c., which, at the critical moment, will deprive the soldier of the power of taking a steady aim, or urge him to fire from too great a distance.*

But improvements of a remarkable nature have of late been made in infantry fire-arms, that will render obsolete all experiments which have been made with the present musket. Already, for many years, the rifle in general use had been greatly esteemed for its accuracy of aim: since the peace, however, a series of experiments have been carried on, with a view to its improvement; leading to the result, that, while spiral grooves in the barrel increase the accuracy of firing, they diminish the range. It was, therefore, found desirable to know what should be the number, the curve, and the shape of the grooves; as well as to ascertain the most suitable kind of cartridge. With these objects in view, experiments on a large scale have been tried, which, added to those of private individuals, have thrown a light upon the subject, formerly but little dreamt of. These researches were greatly facilitated by a happy idea of M. Delvigne of the French army. Before his time, the bullet was forced in by a mallet; but, as far back as 1828, he showed how the rifle could be loaded with the greatest ease, and, yet, the ball should, on its expulsion, hold firmly to the barrel. This method consisted in giving a chamber to his carbine, by contracting that part of the barrel; the powder was placed in this chamber; a ball, having scarcely any windage, was then put in; and two or three blows from a ramrod flattened it sufficiently to cause it to take the form of the grooves, into which it penetrated when fired. This chamber, however, being found to be attended with much inconvenience, a great number of experiments were carried on in an endeavour to obviate it; when a simple idea of Colonel Thouvenin, of the French artillery, overcame all difficulties. This was, to fix, at the bottom of the bore, an iron shank having an axis identical with that of the bore, and around this was placed the powder; the shank, stopping the bullet, allowed it to be struck in such a manner as to cause the lead to penetrate into the grooves. Colonel Thouvenin carried on a series of experiments with this carbine, assisted by two officers who took part in the important improvements which occurred afterwards: these were M. Tamisier, captain of artillery, and professor of the rifle school of Vincennes, and M. Minié, captain of the Chasseurs d'Orleans, likewise an instructor in the school. These officers, having so far perfected the rifle, endeavoured to adapt it for bullets of a conical shape, which, although by no means a new idea, had not yet been brought to a satisfactory state.

---

* It has also been known, that soldiers have been unwilling to pick out their men, or to aim at individuals in the opposite ranks, although bid to do so by their officer, contenting themselves with firing into the general mass of the enemy. This information was received from a British soldier who had been through the Scinde campaign with Sir C. Napier.

This fresh field of research appeared to have no limit; for, as no one element in a rifle can be altered without a series of experiments to determine its effect upon the remainder, it was to be supposed that much time would elapse before a successful result could be obtained. It was owing to the experience acquired by many years of reflection and study, and to the knowledge acquired, by M. Minié, of the former researches of M. Delvigne, that a rifle was perfected, with a shank firing a bullet of this new form, to great advantage. In 1838, M. le Capitaine Blois had proposed the important modification of a cavity at the base of the ball, in order to throw the centre of gravity more forward.* Reflecting upon this, M. Tamisier thought he could obtain a similar result, by hollowing circular grooves at the base of the cylinder. These notches, he found, opposed surfaces, perpendicular to the direction of the trajectory, to the resistance of the air, by which means the bullet is forced back to the desired direction every time it endeavours to deviate, in the same manner as a top when spinning. The chief principle involved in this system, is, to acquire the desired force, and to conquer the resistance of the air by increasing the weight of the projectile and diminishing the charge. To shew the power of these weapons, M. Tamisier had a rifle made with a calibre of twelve millim., firing a ball with seven circular grooves and forty-eight millim. in length. This rifle carried a thousand yards; and the bullet, at that distance, had sufficient impetus to penetrate into hard wood to a depth of six centimètres. In fact, so great is their range, that it has been found necessary to give them a fixed tangent scale, as in field guns, to obtain the angle of elevation. The series of experiments carried on with this conical, or rather cylindro-conical ball, shewed that, by improvements in the bullet, and a very simple process invented by M. Minié, the shank could be done away with; and this suppression has been found to give greater range and accuracy in firing.*

---

* Constitution Militaire de la France, par H. J. Paxhains, Général de Division.

M. Minié's plan consists in having a cavity at the base of the cylinder of the bullet, into which a small iron cup is inserted like a copper cap. On firing, the expansion of metals by heat causes the iron to press upon the lead, which it drives into the grooves.

Of late years, also, an important invention by Mr. Dreyse, the famous percussion-cap manufacturer of Sommerda in Prussia, would most probably have generally superseded the present musket, had it not been for the Minié rifle; it has, however, been adopted in the Prussian service. It consists of a breech-loading four-grooved rifle, the barrel screwing into the end of a strong open guider. Inside the guider slides an iron tube with a strong handle attached, and inside this tube is a *tige* about an inch and a half in length, pierced throughout its length, upon which rests the cartridge. The works of the lock are in the interior of the socket, consisting of a pin acted upon by a spiral wire: a catch is attached to the trigger underneath, and comes through the stock. When the piece is loaded, and the sliding-tube pushed up, the spiral wire is thus contracted and ready for firing. The cartridge is a conical-shaped bullet, fitting into a wooden cup, at the base of which is the fulminating powder; the needle must therefore traverse the powder to reach the cup. This gun has the advantage of enabling sharpshooters to load when kneeling or lying down, without turning the rifle to use the ramrod: but all breech-loading guns are subject to the serious objection, that frequent firing damages them so at the breech, by part of the charge endeavouring to escape that way, that, after a certain number of discharges, they become unserviceable.

The French have, of late years, paid much attention to the accuracy of firing in their infantry; and the following is the system they have adopted.

---

* Des Nouvelles Carabines et de leur Emploi, par Favé, Capitaine d'Artillerie.

In firing exercises, the recruits are kept distinct from soldiers of longer standing. The recruit exercise is exclusively under the superintendence of a board, consisting of the colonel, the lieutenant-colonel, the adjutant-major, or a captain, as *Instructeur-en-chef*, and a lieutenant from each battalion, as assistant instructors, as well as a sergeant instructor from each company. The lieutenant-colonel has charge of the practice, both with respect to that of the older soldiers and the recruits; that of the latter devolving, however, more immediately upon the captains, and the former upon the officers commanding battalions. The lieutenant-colonel is also to afford the captains all needful instruction, or else he devolves this duty upon the commandants of battalions, or directs the necessary instruction to be given, in his presence, by the *Instructeur-en-chef*.

This officer instructs the lieutenants, regulates the duties of the assistant-instructors, and verifies all the returns of target-practice. The assistant instructor drills the sergeant instructors, as well as the subaltern officers of the battalion; and superintends the recruit practice, under the orders of the *Instructeur-en-chef*, being responsible for the correctness of all practice returns. The sergeant instructor has charge of the targets, distributes the ammunition, and keeps the practice reports.

The preliminary instruction having been gone through, recruits receive thirty cartridges, and, according as they fire accurately or otherwise, they are placed into three squads:—

1st. Those who have struck the target three times at 120 yards.

2nd. Those who have struck it more than three times.

3rd. Those who have struck it less than three times.

Every recruit, in the course of the year, fires 80 ball cartridges. The older soldiers are also formed into three classes, and fire nine times at a distance of 120 yards, and six at 180 yards. Successful marksmen are rewarded with silver lace epaulettes.*

The battalion is the infantry unit of strength among all the European powers; and if, for greater facility in the command and economy in the administration, several battalions are often united into one regiment, yet troops when manœuvring are generally reckoned by battalions. Infantry is almost always formed three-deep, except in England, where, since 1808, the habitual formation of two-deep has been adopted.

The real strength of infantry lies in the accuracy of its fire; it should, therefore, in action, take up that position which will enable it to make use of that fire to the greatest advantage.

Firing can be made use of under all circumstances, whilst the bayonet can only be employed in very few cases; but the strength of the *matériel* is evidently of little value, unless there exists a strong moral courage which enables men to attack, or to await the enemy near enough to make use of the bayonet afterwards: this latter is, therefore, a secondary weapon; but it is important that the men be made to understand its full value.

There are two systems of firing for infantry: firing by word of command, and firing independently. By the first is understood firing by battalions, divisions, or subdivisions, the successive fire of each rank, &c. Independent firing is, when the two first ranks keep constantly firing, whilst the third rank loads the weapons of the second, and passes them to it; also, when troops are skirmishing.

Firing by word of command is seldom made use of in action, because it exacts, both from soldiers and commanders, a degree of coolness and attention difficult to be obtained at such moments: besides, it is acknowledged that, in the firing executed by all three ranks at once, the soldier fires badly;

---

* Instruction théorique et pratique sur le Tir des Armes-à-feu; en usage dans les régimens d'*infanterie*. *Paris*, 1845.

for the position of the first rank (having one knee on the ground) is very inconvenient, and one which is kept with difficulty; although without it the third rank would have to fire in the air. It is also recognised, that firing by battalions, or their separate fractions, in thus leaving the whole or part of a battalion alternately stripped of its fire, facilitates a sudden attack by the enemy. Still, there are occasions where the fire of a whole line must take place; such as, when a battalion, ambushed along the sides of a road, fires on an enemy defiling before it within gunshot; or, when troops, awaiting the approach of an enemy within short distance, fire and charge without reloading. This fire is then very destructive, and no other could replace it.

Firing alternately by front and rear ranks, has this advantage, that it protects the whole line, and leaves besides two-thirds of its fire in reserve: but it is more difficult to be well executed than any other, and it is dangerous even to those who make use of it; for the third rank runs the risk of burning or killing those of the front rank who may remain standing. Yet, this system of firing is the only one which a well-drilled regiment can make use of against cavalry; because, against successive attacks of this service, it can thus oppose successive volleys, which when made at a short distance, give the two rear ranks time to aim at the horsemen, who offer an elevated mark.

It was by this means that General Pelet, who commanded a brigade of the Jeune Garde, repulsed a charge of the Austrian cavalry, near Leipsic, on the 16th October, 1813. His brigade being formed into a single square, he allowed the enemy to approach within pistol shot, and made his men fire at his sole word of command: the cavalry was in line, and did not renew the charge.

The firing most frequently made use of by infantry, and into which all the others degenerate as soon as danger is felt, is that which is termed independent firing. The soldier thus fires quicker, and aims better; still it would be an error to assume that the third rank loaded the weapons of the second, and passed their own on to the latter. It may be so at first; but the third rank, growing impatient of not taking a more active share in the fight, and of receiving shots without returning them, soon cease to pass their weapons on to the second. All three ranks, therefore, fire, and the third rank very badly, for the men who compose it, being shorter than those in front, and cramped by the knapsacks of the second rank, in their motions of loading and firing, can only fire in the air; whilst they put the two front ranks to the greatest inconvenience. This is one of the reasons which induced the British to adopt the formation of two-deep, and their firing has lost nothing either in rapidity or accuracy.

The fire of sharpshooters is the most useful of any; for the soldier, perfectly free in all his movements, taking the most convenient attitude, and availing himself of every advantage of the ground, can approach his enemy, choose his mark, and fire with precision; whilst he is to a certain degree safe from artillery fire, which causes so much havoc when the men are in line or column.

Infantry manœuvres are very simple, and do not require the same instruction in the soldier as is demanded for cavalry or artillery, mistakes being more easily repaired; but it is most essential that the nucleus should be well organized.

There are but five systems of a formation for infantry; 1st, skirmishers; 2nd, deployed lines, either contiguous, in echelon, or checkered; 3rd, lines of battalions, forming double columns on the centre of each battalion; 4th, deep masses; 5th, small squares.*

Skirmishers are but an accessory, and are only intended to protect the march of the column, fill up the intervals, or defend the approaches of a position.

---

* Jomini, Précis de l'Art de la Guerre, chap. vii., art. 44.

These several systems are therefore reduced to four, viz., deployed lines having an extended front and but little depth; lines of attack, formed by battalions in double columns of attack upon the centre, or in squares by battalions; the mixed order, where regiments are partly deployed and partly in column; finally, the deep formation, consisting of contiguous close columns of regiments, or a mass of battalions, deployed one in rear of the other.

Infantry attacks either in extended line, in masses, or as sharpshooters; the same systems, together with the formation of squares, are used in defence. It should, however, be observed, that the fire of troops in close order is always preceded by that of sharpshooters, who, in every case, begin the action: this custom arises partly from the necessity of reconnoitring thoroughly the ground in front as well as the enemy's position, and partly, with a view to annoy him along the whole extent of his line, so as to induce him either to begin his fire from a distance, or to retreat before the advancing masses.

The deployed order of attack, formed upon two lines, with a reserve, was formerly much in vogue.

Skirmishers, placed in front, begin the engagement with those of the enemy. The order to charge being given, the troops advance at a quick step, and without returning the enemy's fire; the skirmishers rejoin their several battalions, and the whole charge bayonets. The enemy seldom awaits the shock. Sometimes, when close to the enemy, the word "Halt!" is given; the whole line fires a volley, and then, without waiting to reload, charges its adversary. The enemy being put to flight, the skirmishers follow up the pursuit, whilst the battalions halt to re-establish order in their ranks; they then form into columns, and march to the support of their detached companies.

This manœuvre enables the troops to make use of all their fire, and to attack the enemy on a more extended front; and thus presents danger to him on every side: it also renders his defeat more complete and more rapid, and to a certain degree protects the men from the artillery fire. These are decided advantages; and the attack in line, executed by steady and well-disciplined troops, should be preferred on many occasions.

When, at Salamanca, Wellington ordered General Pakenham to bear down on the French left, and cross its line of march, that officer led his troops to the attack, formed in four columns. But on nearing the enemy, the British columns formed lines as they marched, and though the French gunners stood up manfully for the honour of their country, and sent showers of grape into the advancing masses, while a crowd of light troops poured in a fire of musketry, under cover of which the main body endeavoured to display a front, yet Pakenham bore straight onwards, broke the half-formed lines into fragments, and sent the whole in confusion upon the advancing supports. The British centre was also formed in two lines and a reserve; the first, consisting of the fourth and fifth divisions, Bradford's Portuguese, and the heavy cavalry on its right; the second, of the sixth and seventh divisions, with the light cavalry on the right. The first and light divisions, with Pack's Portuguese, were disposed in heavy masses in rear, and kept as a reserve, to form the left of the line as soon as the British line passed the French Arapiles. As soon as the first shock of the third division with the French left had been observed from the Arapiles, the first line of the British centre advanced to the attack, but was checked, and even outflanked. It was supported by the Portuguese brigade from the second line of the fifth division being brought up to flank the advancing columns of the enemy, but this not proving sufficient, Wellington brought up the sixth division, and the attack was successful.*

But to obtain these advantages, two qualities not common to soldiers are required. This system of attack is not adapted to every kind of ground; the greater part of the officers and non-commissioned officers are either in rear or in the ranks; the soldier is therefore not animated by the example of his superiors; the enemy's grape shot and musketry fire may cause blanks in the ranks, which can only be repaired by the rapidity of the march; it may be requisite to halt and re-establish order, and then all impulse is at an end. The natural instinct of the soldier induces him to make use of his weapon at the sight of danger; hence, firing begins in spite of all the orders of the officers, and the charge fails. This frequently occurs when the enemy, not allowing himself to be intimidated, awaits the charge with coolness, and only begins to fire within short range. Besides, the defeat of one battalion exposing the flank of the one next to it, might cause a general rout.

---

* *Napier's Peninsular War*, vol. v.

It was in two lines, with a reserve, that the Spaniards, 9000 strong, assailed the horn-work of Calvinet at the battle of Toulouse, April, 1814, but, unable to stand the heavy fire of the French, they fled in the greatest disorder.*

The above considerations often induce generals to prefer the attack in column. Columns are formed either by brigades, regiments, battalions, or companies, as may be required. One or more companies or battalions are dispersed in front as skirmishers; and the officers, being between the several companies, and on their flanks, have a powerful influence over the men. The column, when charging, marches at a quick pace, leaving the skirmishers to answer the enemy's fire and overthrow its line. To halt within range of the enemy, and deploy into line, is a most dangerous manœuvre, which always brings on a defeat, if the enemy knows how to take advantage of the mistake.

When, at Albuera, Soult, thinking that the Anglo-Spaniards were giving way, brought up his reserve, General William Stewart reached the fort of the height which it occupied, with Colonel Colborne's brigade. The Colonel, seeing the confusion above, desired to form line previous to mounting the ascent; but Stewart, whose boiling courage overruled his judgment, led up without hesitation, in column of companies, and having passed the Spanish right, attempted to open out his line in succession as the battalions arrived at the summit. Being under a destructive fire, the foremost troops charged; but a heavy rain prevented any object from being distinctly seen, and four regiments of hussars and lancers, which had turned the right flank in the obscurity, came galloping in upon the rear of the line at the instant of its development, and slew or took two-thirds of the brigade. One battalion only, the 31st, being still in column, escaped the storm and maintained its ground.*

---

* Napier's Peninsular War, vol. vi.

This fortuity is especially to be apprehended, when columns are formed very deep. It is easier to give impulse to men formed in masses, than to those in extended lines; the leading division, finding itself supported, advances more boldly; those that follow, fancy they are protected by the one in front; the sharpshooters make up for the deficiency of fire of the columns; and, in this formation, they can be more numerous without inconvenience, as they have large intervening spaces to retire into. In the system of forming the attack on an extended front, a great number of sharpshooters would be a serious evil; they could not retire without demoralizing the line, and the latter would have to fire upon them in order to reach the enemy. But sharpshooters protect the deployment of columns, who can, thus protected, continue, according to circumstances, their charge in line, or halt, and begin firing.

This formation allows of marching rapidly without any fluctuation, and can be employed on almost any kind of ground; and the destruction of one column has not necessarily an influence on the others: besides, troops do not then require to be so well disciplined as in any other formation, and it is only requisite that the officers should be brave and firm, and able to keep the soldiers together. In this manner, the best defended defiles and passages are forced; the killed and wounded are constantly replaced by those who follow; no empty space is left, and the succession of efforts is continual.

---

* Napier's Peninsular War, book xii. chap. vi.

The chief reason against attacking in columns, is the great loss which they often sustain from artillery, especially on flat ground: they should, therefore, if possible, not be formed too deep; as it may be necessary to oblige the column to deploy quickly. When troops are very animated, there is another resource, that of greater rapidity in the march.

The French losses at Albuera were caused by the too great depth of columns: the fifth corps who formed into two close columns composed of battalions, deployed, one behind the other; a formation which has been injurious to France in other battles.

An order of attack composed of both the above formations has been employed with success on many occasions: it consists in making one portion of the troops march in line, whilst the other is formed in column at the wings; the advantages of both systems are thus obtained, and their inconveniences lessened.

It was thus that Wellington attacked General Foy's position, at Salamanca. The latter, posted on undulating ground, and flanked by some squadrons of dragoons, covered the roads to the fords of Huerta and Encina. Wellington formed the light division into two lines, and likewise flanked it by squadrons of dragoons; and supported them by the first division in columns, flanked on the right by two brigades of the fourth division. The seventh division and the Spaniards followed in reserve. The light division marched steadily forward without firing a shot, save by its skirmishers; although Foy, in his retreat, threw out clouds of skirmishers, who for three miles kept up a heavy musketry, which was occasionally supported by a heavy cannonade.

Infantry attacks retrenchments in multiplied columns of little depth; it thus exposes fewer men to the enemy's fire from the parapets, and strengthens the attack on feeble points. The columns should be directed upon the salient angles deprived of their fire; the skirmishers halt on the edge of the ditches, fire at the defenders, and, especially, at the gunners; the pioneers let themselves down into the ditch, cut down the palisades, and form steps in the escarp. The columns, having reached the ditch, leap into it; the bravest climb upon the berm, and help up their comrades; they run up the parapet, throw themselves into the interior of the works, open the barrier, and allow the remainder of the attacking force to enter: they then rally, and march in good order against the reserve. Before attacking a retrenchment, it is usual to employ artillery in breaching the parapets, and in throwing shells into the interior of the work.

In mountainous and woody countries, there are positions, which cannot be attacked by infantry when formed either in line or in column. The ground, too, much covered with thickets, or broken by ravines or rocks, will not allow of any regular order in the march of troops. These positions are therefore attacked by skirmishers; in such cases, battalions, and, often, whole regiments, are employed as skirmishers.

No position is inaccessible to brave men, who, leaving the enemy no spot secure against their attacks, care but little for the fire of artillery which cannot be made use of with any certainty against them. It may here be remarked, that a soldier requires more bravery and active daring, to advance and engage with the enemy in this manner, than when he is formed in line: for here, the example of the nucleus is purely moral; the soldier has every facility of lagging behind and concealing himself; and, being less supported, he feels himself more exposed to the combat of man to man, than when fighting in a body; for then, danger menaces no one in particular. If skirmishers, therefore, are not brave and animated, they may fire for a whole day without advancing;

sheltering themselves behind trees, hedges, walls, &c., receiving and doing but little damage. The columns, which should have followed, will remain stationary; new bodies of skirmishers will be sent to relieve the first, who may be fatigued or whose ammunition may be expended; and the attacks will not only be without any vigour, but often fail.

A brave nation would make use of this system of attack with the greatest advantage; for it only requires to be skilful in the use of fire-arms, obedient to the voice of the commander, and possessed of that enthusiasm which is never wanting when an invasion is to be repelled.

It was thus that the Americans, who had only fowling-pieces, often beat the English troops in the War of Independence; thus, that the Vendean peasantry defeated the Republican armies of 1793, and that the youth of Germany became a powerful support to the troops of the line, when repelling the French armies back into the interior of France.

Skirmishers fighting on a plain are exposed to be charged, with advantage, by cavalry; and may, by falling back upon the columns which follow, throw them into the greatest confusion: they are, therefore, instructed in forming the rallying square; for a multitude of groups of 16, 24, or more men, would offer some resistance. The British soldiers are particularly exercised in this.

Some German nations, such as Saxony, Wurtemberg, and Hesse, have introduced into their infantry a system of bayonet fence, intended to render skirmishers capable of defending themselves against one or more horsemen.

One of the most remarkable examples of a small body of skirmishers defending themselves against cavalry, occurred in the expedition to Russia in 1812. Whilst endeavouring to save the wounded at Mojaick, fifty of the light company of the 33rd clambered up a height, the summit of which was occupied by the enemy's cavalry and artillery. The French army, (halted under the walls of Mojaick,) looked on with astonishment at this handful of men, who, dispersed over the unprotected declivity, annoyed thousands of the Russian cavalry. The consequence, which might have been anticipated, soon appeared: several Russian squadrons were seen in motion, who, the next moment, surrounded these brave men. They instantly formed a square; but they were too few, among so many horsemen, and in so vast a plain, and were soon lost to the view of the French army. Some smoke, which arose from the centre of the mass, prolonged the uncertainty; this anxiety lasted for some moments, when, all at once, the army gave a shout of admiration, on seeing the Russian cavalry disperse, in order to escape the well-directed fire of this handful of heroes, who were thus left masters of a large field of battle, of which they barely occupied a few feet.*

Infantry, when attacked by infantry, is generally formed in an extended line. The ground which the enemy must go over in order to reach it, is defended by artillery fire, and by skirmishers, who, concealed behind any intervening object which can sufficiently protect them, delay the march of the enemy, to whom they frequently occasion great loss. As soon as any disorder is seen in the enemy's ranks, or that he appears irresolute, the line immediately charges, and drives him back.

Infantry, when charged by cavalry, forms itself into squares, or into close columns; their exterior files presenting a menacing front on every side. The French, and some other continental nations, form their squares in three or six files deep. The English have adopted the formation of four-deep, which is quite sufficient.

The formation of a square enables infantry, when attacked, to defend itself in every direction; but, as the angles are without defence, artillery, if there be time, is placed before them, or they are frequently supported by natural obstacles, such as hedges, ditches, brushwood, &c., and, sometimes, skirmishers are placed behind these obstacles, to fire at the cavalry when it approaches the square.

---

* De *Ségur, Exp. de Russie*, liv. vii. chap. xiii.

When several battalions or regiments are attacked, they can take up a solid position; that is, form supporting squares. For example, if the squares were at two hundred paces from each other, the projectiles crossing at half this distance would have a murderous effect. It was in squares, by regiments, and flanked with artillery, that the divisions of Morand and Gudin repelled the charge of twenty-five Prussian squadrons at Auerstädt, commanded by Blucher and Prince William of Prussia, who had not taken the precaution to open the attack with horse artillery. It was in this formation, at Heilberg, in 1807, that four regiments, composing the division of Legrand, and those of the fusileers of the imperial guard, repulsed the charge of the Russian and Prussian cavalry, and protected the attack of their reserve.

In the Egyptian campaign of 1798, by General Bonaparte, the French marched to Cairo, formed in squares. The divisions of Désaix and Regniers formed the right towards the desert, Dugua's division the centre, Bon and Menou the left. Bonaparte, who, since the engagement of Chebriess, had reconnoitered the enemy and the ground, placed his troops in the following manner. Each division was formed into a square, each square six files deep. The companies of grenadiers marched in rear, ready to reinforce the points of attack. The artillery was placed at the angles, and the generals and baggage in the centre. When a position was to be attacked, the first three ranks were detached to form the columns of attack; and the remainder, still forming a square, were ready to support the columns, if repulsed.*

The same system was adopted by Kleber, who formed 12,000 men into echeloned squares, when marching to meet the Turkish army, at Heliopolis.

The French advanced guard, after crossing the Rippach, in

---

* Thiers, French Revolution.

1813, marched also in four moving squares; the cavalry being in rear and on the right flank.

The formation of close columns to resist cavalry is, generally, only made use of when there is not time to form a square; but artillery can make frightful ravages in such a mass, and the disorder which then takes place can with difficulty be repaired. Besides, the wounded cannot leave the column without being taken; we may add, that, in close columns, only the fewest number of men can fire.

The Russian infantry often adopted this formation, and, in many battles, it caused them enormous losses. However, the Austrians, formed into close columns at the battle of Essling, drove back the French cuirassiers: but then, the artillery of the latter power was, for the most part, dismounted, and unable to support the charge; whilst that of the Austrians was in a very efficient state.

A stratagem has been adopted with success, by infantry, on several occasions; that is, lying flat on the ground, allowing the cavalry to pass over them, then getting up and firing at the enemy in rear. This stratagem can be made use of, especially by skirmishers, with success. A line of Russian infantry gave an example of this, at the battle of Trebia, in 1799; and the French, in the retreat from Oporto, in 1809; the Mahrattas, at the battle of Assaye, also made use of it with advantage.

Infantry, acting on the defensive with the determination of maintaining their position against a superior force, usually strengthen it by means of artificial obstacles, such as entrenchments, redoubts, and other field works; and, though such defences are often eventually overcome, they are seldom carried without great loss to the enemy; and they will often deter a general of middling talent, from attacking, especially when he has not brave troops to depend upon.

The occupation of a village, in action, by infantry, has always been an object of importance, as this greatly strengthens a position. For this purpose, it is generally fortified by temporary works. The following description of the village of Anglet, in 1811, will convey a very accurate idea of a fortified village. The village of Anglet is distanced about a mile and a half, or two miles, from the advanced works of Bayonne; and stands upon the high road from Madrid to Paris which runs through the middle of that city. Along this road, all the supplies for the left of the British army were brought up; consequently, a sally, made in that direction, might have been productive of great mischief. To guard against such an occurrence, due care was bestowed upon fortifying and strengthening the post. About a hundred yards in front of the village, felled trees were thrown across the road, with their branches towards the town; forty or fifty yards in rear of this, a ditch was dug and a breastwork thrown up, behind which a party might securely stand and do great execution, with their fire, upon any body of men struggling to force their way through the thick branches; on each side of the road, again, where the ground gradually rises into little eminences, redoubts and batteries were erected, from which a heavy flanking fire might be kept up; whilst all the houses, in the village itself, which, by the way, are built in a straggling manner, and at considerable distances from one another, were loopholed. The church, being on higher ground, was completely metamorphosed into a little citadel; strong palings were driven into the ground round the churchyard, from openings in which, some pieces of light artillery shewed themselves; the walls of the edifice itself were strengthened by an embankment of earth, to the height of four or five feet, above which, narrow openings were made, to enable the defenders to level their muskets; whilst within, the pulpit was filled with barrels of gunpowder, and the space enclosed by the rails of the altar was used as a magazine for shot and shells.*

---

* Gleig, Expedition to Washington.

CHAPTER V.

CAVALRY TACTICS.

THE success of cavalry manœuvres depends on the rapidity, steadiness, and boldness with which they are executed. Cavalry cannot, like infantry, rely upon fire-arms as a potent support; neither can it withstand firmly and defend a position, against an aggressor. On the contrary, a charge of the enemy's cavalry must inevitably overthrow it, and infantry, drawn up in line, would oppose nearly treble the number of men. Cavalry has, therefore, but one system of attack and defence, which consists in throwing itself rapidly upon the enemy, and anticipating his hostile designs.

The nature of its organization clearly demonstrates, that it is only in time of peace, and with infinite care, that cavalry can be solidly organized, so as to obtain success proportionate to its importance and expense; for, though war inures it to fatigue and skirmishing, yet, unless, before entering on a campaign, it is perfectly instructed in the care necessary for the preservation of the horses, and furnished with that self-possession which is only obtained by a constant habit of being on horseback, it will soon encumber the hospitals and depots of the army.

There are three kinds of cavalry: heavy cavalry, dragoons, and light cavalry.

It has ever been found expedient to have, in an army, a corps composed of men of large stature, protected by armour, and mounted upon strong horses; for, in a charge, weight and steadiness are often of more importance than speed. This principle, forgotten during the eighteenth century, came into notice again, as soon as it was perceived what advantage Napoleon had derived by giving cuirasses to twelve regiments of cavalry.

Heavy cavalry, from the weight of their armour and size of their horses, are unable to act as skirmishers or escorts; besides, it is a corps too expensive to be uselessly exposed; but it appears with confidence on the field of battle, where the most perilous attacks are reserved for it. Its duty is to charge squares and masses of infantry, and, from its weight, break through the enemy's cavalry; on which account some experienced generals have considered, that it would be of great advantage to arm heavy cavalry with lances, as being the weapon most fitted for a charge.*

Dragoons were originally intended to act both as horse and foot soldiers, to charge in line with the steadiness of cuirassiers, to skirmish with the activity of hussars, and, when dismounted, to be equal to any infantry. After much loss of time and great expense, it was found that only a very inferior body of troops had been obtained; and the dragoons of the present day are only a mixed cavalry, sufficiently strongly mounted to charge with advantage, and which, being unencumbered with any sort of armour, can be employed as skirmishers.

Light cavalry was, for a length of time, in many countries, an irregular force; but when the inconvenience of having undisciplined troops with an army began to be felt, and that petty engagements became less frequent, they were gradually embodied into regiments, and disciplined.

Whatever system may be adopted with respect to the formation of cavalry, it is certain that a numerous cavalry, whatever may be its nature, must exercise a powerful influence over the operations of a war, by spreading terror over a large tract of country, carrying off convoys, rendering the enemy's communication difficult, if not impossible, and thus destroying all the harmony which might exist in his enterprizes and movements. In short, almost all the same advantages may be procured, by a proper use of cavalry, as would be obtained by a general rising of the population; that is, constantly harassing the flanks and rear of the enemy, and preventing their general from calculating anything with certainty. Hence, any organization which would tend to increase the corps of cavalry, by incorporating militia-men, would be a good system; for these militia-men, assisted by a few squadrons of regulars, would, in a short time, make good partizans; and, although they might not possess all the qualities which warlike and nomadic populations are endowed with, (who, to a certain degree, pass their life on horseback, and whose first instinct is that of skirmishing,) they would still be of great use.*

---

* This is Marshal Marmont's theory, and, in Russia, it has been adopted so far as to arm the front rank of cavalry regiments with the lance.

In this respect, Russia has great advantages over her neighbours, as well by the quantity and quality of the horses of the Don, as by the nature of the irregular militias which she can levy at any moment. These advantages are incalculable; for, though the Cossacks are of little use in the shock of a great battle (except, perhaps, for the purpose of skirmishing on the flanks), yet they are terrible in a pursuit, and in a war of out-posts. As long as the Russians had only a few regiments of irregulars, their utility was unknown; but when their number became increased to fifteen or twenty thousand, their importance began to be sensibly felt, especially in countries where the population was not hostile to them; for a general opposed to them is never certain of the safe arrival or execution of his orders, his convoys are always in danger, and his operations uncertain.

---

[*] Jomini, Art de la Guerre, chap. vii. art. 45.

Volunteer corps of hussars or lancers, levied and organized at the breaking out of a war, ably led by hardy chiefs, such as Tettenborn, in the German war of 1813, would fulfil nearly the same purpose : but they must be looked upon as independent corps; for, if they were obliged to receive their orders from head quarters, they would no longer be partizans.

Austria has also, in the Hungarians, Transylvanians, and Croatians, a resource which other states have not got : however, the services performed by the mounted Landwehr prove that a great deal can be obtained from this species of cavalry, were it only to relieve the regular cavalry from its accessory duties, such as escorts, detachments for convoys, flankers, orderlies, &c. England possesses a fine nucleus for such a corps in her yeomanry.

All that has been said with respect to the formation of infantry, may apply to cavalry, with the exception of the following modifications.

1st. Lines deployed in echiquier or in echelon, are much more suitable for cavalry than a line without intervals; whilst, for infantry, a line deployed in echiquier would be too disseminated, and even dangerous, if cavalry were to penetrate and take its battalions in flank; so that the formation of infantry in echiquier is only safe as a preparatory movement before approaching the enemy, or else for lines in columns of attack, able to defend themselves in every direction against cavalry. However, whether the formation in echiquier be preferred, or that of lines without intervals, the distance of the several lines from one another should be sufficient to prevent confusion, arising from the rapidity with which cavalry is driven back in case of a charge not succeeding. It should, however, be observed, that in the formation by echiquier, the distance may be less than in line without intervals; and that, in no case should the second line be without intervals, but should be formed in columns by divisions, or at least, leave openings of two squadrons, which may be formed in columns upon the flanks of each regiment, to facilitate the rallying of the first line if driven back.

2nd. A column of attack, composed of cavalry, should never be formed in close columns: but, at full and half distances of squadrons, so as to leave plenty of space to wheel and charge. This, of course, is only applicable to troops ordered to engage; for when they are at rest behind the line, they may be formed into close column, so as to take up less space of ground, and diminish the space they would have to go over to engage; but it must be clearly understood, that these masses should be sheltered from artillery.

3rd. In consequence of a flank attack being more to be feared with respect to cavalry, than an engagement of infantry against infantry, it is necessary to establish, upon the extremities of a line of cavalry, a few squadrons echeloned by platoons, so as to be able to form, by facing to the right or left, against the enemy, who might endeavour to disturb the flank.

4th. For the same reason, it is necessary to know when to order a few squadrons to charge the flank of a line of cavalry which is being attacked: if there is a corps of irregular cavalry, it should be especially reserved for this use in a battle; as, for such a purpose, it is worth as much as, and perhaps more than regular troops.

An important observation also is, that, especially with respect to cavalry, the command should extend in depth rather than in length; that is to say, supposing a division of two brigades to be deployed, it would not be correct for them to form line one in rear of the other: but each brigade should have one regiment in the first line, and one in the second; thus each unity of the line would have its proper reserve in rear of it—an advantage which cannot but be appreciated: for the events of a charge are so various, that it is impossible for a general officer to be master of two cavalry regiments deployed in single line.

Besides each brigade having its own reserve, it would be desirable for the whole division to have a general reserve;

whence it is considered that the number of five regiments, for a division, is the best suited for cavalry; as this number is adapted to any formation. If each brigade forms but one line of two regiments, the fifth would make a general reserve in rear of the centre; or, three regiments can be deployed into line, and the remaining two formed in column in rear of each wing: if, on the other hand, a mixed order be preferred, two regiments can be deployed into line, and the other three formed in column in rear of the wings and centre, leaving intervals to allow the first line to escape if defeated.

Two essential maxims are generally allowed respecting engagements of cavalry against cavalry. The first is, that, sooner or later, the first line must be brought back; for, even were it to succeed most brilliantly in a charge, it is probable that the enemy, by opposing new squadrons, would force it to rally in rear of the second line. The second maxim is, that, the troops and commanders being equal in merit, the victory will remain to him who, having the last squadrons in reserve, will know the decisive moment when to make them charge the flanks of the enemy's line already engaged with his.

At the battle of Wachau, near Leipzig, on the 16th October, 1813, two Russian regiments of light cavalry were posted in two lines in front of a small brook or drain which ran from Gossa towards the Pleiss. The banks happened to be swampy, and could only be passed with difficulty, and by a leap across a wide drain; with the exception of causeways made in two or three places by the farmers for agricultural purposes. This obstacle was only partial, and, at a few hundred yards to the right, nearer Gossa, it ceased to be an impediment.

On a hill facing it, was formed the whole corps of Latour Maubourg, amounting to upwards of 5000 horse. Murat had taken the command, and began to descend the hill, directing his attack upon the two Russian regiments at its foot. The French advanced in line of contiguous columns of regiments; certainly in one body only, that is, with no second line or reserve. No doubt they expected to dispose of their first opponents easily. The narrowness of the front to be attacked, as well as the nature of the ground, caused this powerful force to crowd into one dense mass before it came in contact with the Russian dragoons; these were overwhelmed, and driven across the swamps, or over the causeways. Many of the rearmost were killed; but the rest rallied as soon as they had crossed the brook. The lancers, who were in second line, retired by their left to another causeway, but did not cross it, and formed again. But the enemy themselves were unexpectedly checked by this unforeseen obstacle, their crowding and confusion increased, and, at that moment, a Russian regiment of hussars appeared in their rear. This caused a panic. The unwieldy mass became noisy, and attempted to retire: the Russian light cavalry instantly followed them. The Emperor Alexander, who stood on the hill above, seized the opportunity to send off his own escort of Cossacks of the guard, amounting to several squadrons, who passed the stream at a favourable spot near Gossa, and took the retiring mass in flank. This completed the panic, which then became a flight, and the fugitives did not draw their bridles till they had regained the protection of their own infantry. Latour Maubourg received a severe wound, which disabled him for life; Murat was in great danger of being taken; and six guns fell into the hands of the Cossacks. Thus 5000 of the French cavalry, led by Murat in person, were foiled by an insignificant obstacle. They were seized with a panic; and, for want of a second line on which to rally, and from which to take a fresh departure,—a precaution without which no cavalry attack ought ever to be made,—they were obliged to abandon their enterprize, and fly before a force of light cavalry, which altogether could not have amounted to 2000 men.*

---

* Commentaries on the War in Russia and Germany, 1812-13, by Major-General Hon. G. Cathcart.

It is upon these two truths, that a proper idea may be based of the system of formation the most suitable for leading a large corps of cavalry to the charge: whatever system may be adopted, care must be taken not to deploy large corps of cavalry in lines without intervals, for they are difficult masses to manage; and, if the first line failed in its charge, the second would be driven back without being able to draw the sword.*

At Château-Thierry, in 1814, the Prussian general, Horn, with twenty-four squadrons, was ordered to keep the French in check until the Russian general, Sacken, could cross the Marne, after his defeat at Montmirail, 30th January, 1814. He formed these troops in two lines of twelve squadrons each without intervals. The whole first line advanced to the attack. The French waited till it came to a proper distance, and routed it. These squadrons threw the second line into disorder, and carried it away, *pêle-mêle*, in every direction over the plain.†

If an attack of cavalry should be spirited, its pursuit should not be less so: but no line of cavalry should follow up a pursuit, unless it has a reserve. If it has no reserve, it should promptly rally, and follow up the pursuit with only part of its forces.

The excessive negligence, on the part of English cavalry officers, in not supporting their attacks by a reserve, frequently, during the Peninsular War, produced the most pernicious consequences.‡ The following case was so glaring, that Lord Wellington ordered a court of inquiry upon it. In the month of June, 1812, Major-General Slade was ordered to advance from Llera in the direction of La Granja, to cover a reconnoissance. For this purpose, he took with him two regiments of cavalry. General Lallemande, having a like object, came forward also with two regiments of French dragoons, on the side of Valencia de las Torres. Slade, hearing that the French cavalry was so near, attacked it and drove it back beyond the defile of Maquilla, a distance of eight miles, his troopers, in the heat of the pursuit, breaking into a confused mass. But Lallemande had here his reserves in hand, and attacking the disorderly English horse, totally routed it.*

---

* Jomini, Art de la Guerre, chap. vii. art. 45.

† Russian Campaign in France, 1814.

‡ Wellington Despatches, 18th June, 1812.

When, after a victory, infantry still continues to resist, the cavalry should not charge them, but endeavour to reach the head of the disordered masses, and cut off their retreat; for the great art of a pursuit is not to cause the enemy to fly with rapidity, but to induce him to hold together for some time, whilst his escape is rendered impossible; or, else, by dividing the enemy's columns, to get between them, and beat them in detail. The most striking example, perhaps, of the results produced by a vigorous pursuit, is that afforded by the French army after the double battle of Auerstädt and Jena, 18th of October, 1806. The Prussian army, separated into several corps, was pursued, without ceasing, in every direction; could rally nowhere, and capitulated at Erfurt, Magdeburg, Lubeck, Prenzlow, and in Westphalia. The French cavalry, followed close by an indefatigable infantry, which marched from ten to twelve leagues a day, had crossed the Saale, the Elbe, and the Oder, and, in spite of so many divergent marches, found itself, one month after the battle, upon the borders of the Vistula. The two-thirds of the Prussian monarchy were conquered, and its army nearly annihilated.

Of all the branches of the service, cavalry appears to be the one most difficult to manage. Incapable of defending a position by itself, unable even to engage on many kinds of ground, easily disunited, almost totally dependent on their horses, no corps so much requires the discrimination and zeal of talented leaders: and the experience of all ages proves that men able to make successful use of cavalry *in masses* have been but few. This art requires, in fact, a thorough knowledge of this branch of the service, and a quickness of eye, which can seize rapidly the whole of a movement, and understand all its consequences. As this eagle glance must be accompanied by great energy, it is not surprising that there are so few good cavalry generals, and that this service so seldom fulfils the part for which it is intended.

---

* Napier's Peninsular War, vol. v.

Looking back upon the European wars from 1792 to 1815, it is remarkable what little advantage those nations, who were most celebrated for their cavalry, derived from it, although their efforts were directed against one which was supposed to possess bad horses and worse horsemen.

The Austrian cavalry, so numerous and well mounted, were almost always disseminated; and, even in countries best suited to its manœuvres, could boast but of few brilliant engagements. Their generals seemed to have forgotten how to make use of them in masses.

The Prussian cavalry, so famous in the days of the great Frederic, performed no one remarkable feat during the first three campaigns of the French Revolution; and when, after ten years of peace, it appeared at Jena and Auerstädt, it was nearly annihilated.

The campaign of 1814 began under the worst auspices for the French. Invaded by all the European powers, France was overrun by their numberless cavalry; but what advantage did they carry off in connexion with their numerical force and their organization? How can we explain the bold manœuvres of Napoleon, and his success, with men overcome by fatigue? How was it that his army was not destroyed before Laon? Why did the allies, with their numerous cavalry, suffer the reverses of Montmirail, Château-Thierry, Craonne, Nangis, and Montéreau?

The reason of the feeble success of their cavalry is easily explained. A service, whose very existence consists in activity and boldness, will lose all its vigour as soon as the operations of an army become undecided; and, if cavalry played so great a part under Frederic and Napoleon, it was because those great men never allowed that body to engage except in strong divisions, and never waited for the enemy's attack, but always anticipated it; for the moral strength of cavalry is much more easily affected than that of infantry.

We have stated above, that the strength of cavalry consists in the rapidity and steadiness of its movements. It should, therefore, take up a position which would enable it to see everything going on, and allow it to be perfectly free in its action. Besides, no body of troops should be able to approach without being exposed to be charged; it would therefore commit a serious error, were it to support its wings with a wood, vineyards, a village accessible to the enemy's infantry, or not occupied by its own. If, however, unavoidable circumstances forced a body of cavalry to do so, it should send out patrols, so as to be warned of any movements which might be directed against it; but, should the enemy appear on its flanks, the position will no longer be tenable.

At the battle of Kollin, in 1756, fifty-five Prussian squadrons, wishing to out-flank the enemy's right wing and take it in rear, overthrew the Austrian cavalry, and continued their movement between the wood of Radovesnitz and a ravine. This wood was lined with Austrian infantry, who took the Prussians in flank, and made them retire, with a loss of fourteen hundred men.

Although the ground may appear to be level, it may contain hollow roads, ditches, marshy spots, which may be totally concealed by drifts of snow or the height of the crops. From this results the necessity of having the front and flanks of a position thoroughly reconnoitred; and, if this cannot be done beforehand, skirmishers should be sent out to precede the troops as they approach the enemy.

When, at the battle of Talavera, July 1809, Sir Arthur Wellesley ordered Anson's brigade of cavalry, composed of the 23rd Light Dragoons and the 1st German Hussars, to charge the head of Villatte's columns, this brigade went off at a canter, and, increasing its speed as it advanced, rode headlong against the enemy; but, in a few moments it came upon the brink of a hollow cleft, which was not perceptible at a distance. The French, throwing themselves into squares, opened their fire. Colonel Arenstchild, commanding the hussars, an officer of forty years' experience, promptly reined up at the brink; but the 23rd, under Colonel Seymour, continued their impetuous career, men and horses falling over each other in dreadful confusion.*

The success of a charge depends upon a well regulated rapidity accelerated by degrees, added to a perfect alignment, which will enable the whole line to reach the enemy at the same time. But, in many cases, the greater or lesser degree of boldness of the men, and speed of the horses, prevent this; and a charge in line is often only a rapid succession of charges, of which the bravest men form the salient points. These are the reasons which so often cause undecided charges, and should prevent any being made on too extended a front.

The failure of a charge is not always attributable to cowardice in the horseman. Slippery, unequal ground, renders the march difficult; rain, snow, thaws, cause the horses to slip; many of them become frightened: in such cases, no vigour can exist in the movements. Sometimes great disorder will be occasioned by beginning the charge at too great a distance; for the troop leaders, charging under the enemy's fire, lose their points of direction; the soldier no longer marches straight before him; the intervals between the several squadrons are lost, and they get jammed up together; the killed and wounded delay the general movements; the enemy charge; and the disorder becomes complete.

The gradual increase of speed in a charge should be carefully attended to; otherwise, both men and horses will be breathless when they reach the enemy. In most cases, before engaging, the cavalry will have made a tedious march. The horses, worn out with want of food and the weight of their riders, will, if uselessly galloped, be too much fatigued, after one or two charges, to attempt any decided movements during the remainder of the day; besides, if a charge is immediately begun at a gallop, the men cannot be made to keep line. It was the deep conviction of this truth which caused General Lasalle, one of the best cavalry officers of his day, on seeing a body of the enemy's cavalry charging at full gallop for a long distance, to exclaim—"There go lost men;" and it was soon after completely routed by its opponents, who had advanced at a trot.* There are, however, a few cases in which, whatever state the cavalry may be in, the charge must be begun at a gallop. For example: when an ambushed enemy suddenly attacks cavalry, it must then meet the attack, at the height of its speed, to oppose the enemy with a shock equal to its own.

---

* Napier's Peninsular War, vol. ii.

In the retreat of the allies from Bautzen, May 1813, Blucher, having passed his main column across the bridge and through the defile of Haynau, still defended the entrance to the village with the skirmishers of his rear guard; but, finding that the nature of the ground in rear of Haynau favoured his purpose, he formed five regiments of cavalry in mass behind the village of Baudmansdorf, in a situation completely concealed from the enemy's view by the village and an intervening rising ground. This ambuscade was formed obliquely to the line of retreat of the main column, which traversed an uninclosed country, and to the southward of that line. When all was arranged, three regiments forming the rear-guard gave up the bridge at Haynau, and retired, following the main column to a good rear-guard position on the direct road to Liegnitz, and a few miles from Haynau. Here they halted and shewed front, inviting an attack.

As soon as Ney's advanced guard had passed the defile, entered the plain, and deployed to attack the Prussian infantry rear-guard, a preconcerted signal was given—the burning of a windmill. The allied cavalry, masked till that moment, now deployed in two lines on the right of the enemy, and moved rapidly onwards to attack him in flank. It was necessary that the charge should be made at a gallop the whole way, so as not to give the French time to recover; and the success of this charge was a loss to the French of 1500 men, and eleven guns.*

---

* Jomini, *Précis de l'Art de la Guerre*, chap. vii. art. 45.

The art of manœuvring cavalry, which consists in concealing its movements, and in rapidly bringing together a superior force upon the weak points of the enemy; in avoiding useless engagements, in order to overwhelm him; keeping part in reserve, and making it suddenly appear in a decisive movement;—this art cannot be so ably exercised in a flat and open country, although this is generally supposed to be the best for cavalry movements. Districts consisting of undulating plains, sprinkled here and there with woods, villages, and farms, where the hills have gentle slopes, and the valleys are tolerably wide, will enable experienced officers to obtain the greatest successes with inferior forces.

Cavalry should never appear before the enemy except to engage. To keep it exposed whole hours, without charging, is to misunderstand the spirit of this service, and destroy its moral courage. The men cannot become animated, at the sight of their companions killed or wounded, nor the horses from the effect of the cannon balls and shells which fall among them. It is true that cavalry cannot always be kept sheltered, in an action, from the enemy's fire until the moment for charging. Its presence is sometimes indispensable on certain points which cannot remain unprovided with troops, and there may be no rising ground to conceal it: but this circumstance must be considered as an unfortunate exception. Napoleon's battles present many examples of a similar use of cavalry, which often obliged it to be renewed, and finally caused its ruin.

---

* *War in* Russia and Germany, by Major-General Cathcart, book ii. ch. v.

By a natural consequence of the principle above stated, cavalry should not be posted on the ground which it is to defend, but in rear of it.

The mechanism of cavalry engagements requires that charges should succeed one another rapidly, so that, its efforts being continual, the advantage may remain with the most obstinate: but, to effect this, there must be a second line in support, and, in many cases, a reserve. The necessity for this support lies, first of all, in the human heart; men expose themselves to danger with greater confidence, if they feel that they have companions in their rear, ready to back them; it is requisite, also, from the uncertainty of the success of cavalry, and in consequence of the disorder which follows even among the conquerors: so that an able enemy, possessing a reserve, would be certain of obtaining the final advantage over an imprudent cavalry which had attacked it without having the same resource. Besides, the rally, after a defeat, would be excessively difficult, if not impossible. It should, however, be observed, that, in case there was no second line of cavalry, the first might take refuge in rear of its infantry. Still, in such a case, great loss would be sustained, and the advantage not easily obtained again. At the battle of Wurzburg, the French cavalry, without having a reserve, engaged the Austrian cavalry, whom they drove back; but the latter had formed a second line, which having re-established the engagement, not only repulsed the French cavalry, but completely demoralized it; for, although the fire of the infantry kept the conquerors in check, no efforts of General Jourdan could bring back his discouraged cavalry to the charge.

The second line is generally from 300 to 400 yards in rear of the first, and this distance is considered sufficient to prevent the support being disordered, should the first line meet with a repulse; its wings should extend beyond those of the latter: this formation will enable it to charge the enemy's troops, in the event of their taking the wings of the first line in flank or in rear; the support may also, in the same manner as the first line, have columns in rear of its wings; and, when the first line charges at a gallop, the second follows at a trot.

When one body of cavalry has defeated another, the conquerors should rally and manœuvre, to attack the flank of the troops which the enemy protected; it was to this manœuvre that Condé, at the age of twenty-two, owed the victory of Rocroi. After having defeated the Spanish cavalry of the left wing, he ordered Gassion to continue the pursuit with part of the first line, whilst he himself, with the remainder and the support, broke through the German and Italian infantry. Having then learnt that his left wing was defeated and pursued by the Spanish cavalry of the opposite wing, he passed in rear of the latter, charged them, and retook their prisoners.

There only remained, on the field of battle, four veteran regiments of Spanish infantry, who were formed into a solid mass, and defended by eighteen pieces of cannon. Condé rallied his fatigued cavalry, and after a fourth charge, succeeded in penetrating the ranks of this brave infantry; his victory was complete.

But such manœuvres require a great deal of coolness in the commanding officer; for a man is easily carried away by the appearance of the first advantage, and neglects the opportunity of obtaining a greater.

From the above it will be seen that, in general, a charge of cavalry should be directed upon the extremity of a line, and not upon the centre; and that the point which will soonest enable the conqueror to cut off the enemy's line of retreat, should be the one selected for attack.

The most unfavourable charge for cavalry, is that which is directed against a well-disciplined infantry; for infantry, in its usual formation, presents about two men to every horseman, and can even double this number, when preparing to receive cavalry.

Some tacticians, struck with the danger to which infantry is exposed under such a circumstance, and knowing the injurious impressions made upon young soldiers by the menacing aspect of a charge, have proposed various means to defend them from it. Amongst others, Guibert proposed to fix picquets fastened together by means of ropes, in front of the squares; and Bohan, who is an authority in cavalry movements, approved of this system: but any one who has been in action, knows the impossibility of making use either of the above, or of *chevaux-de-frise,* or of crows-feet, which were employed when there was no rapidity in the movements. It is, therefore, only by its fire and able formation, that infantry can expect to resist cavalry.

To charge infantry, there are certain favourable moments, which should be instantly seized, and when its resistance will be neither long nor destructive: these are, when a column on the march is engaged under a well-directed fire, leaving its wounded in rear, or appearing to hesitate; it should then be taken in flank; such was General Kellermann's manœuvre at Marengo. He was in line, with a feeble brigade, on the right flank of Désaix's division, and concealed by means of vines hung to the trees; the 9th light infantry was actively engaged with a column of Austrian grenadiers, who were following up the success which had, until then, been obtained by the Austrians. Kellermann immediately formed column left in front, charged, and dispersed the grenadiers; which decided the victory in favour of the French.

Another favourable opportunity for charging is, when the enemy's line is altering its formation. In such a case, no time should be lost, but the charge made as rapidly as possible.

The moral state of the enemy should always be taken into account. If former actions have proved his valour, no attack should be made without being preceded by artillery, otherwise the attacking force would subject itself to serious losses without any result: on the other hand, a dispirited infantry will often give way at the mere appearance of a body of cavalry.

In some cases, cavalry is obliged to act dismounted; and, although it cannot expect to be equal to infantry, it may still be found a good substitute.

Thus, a body of cavalry, forming the rear detachment of the rear guard, may have to defend a bridge, a defile, or a barricade; whilst the remainder of the rear guard continues its retreat: in such a case, part of the men will have to dismount, and keep back the enemy with the fire of their carbines; and, as soon as they consider the rear guard in safety, they remount and rapidly join it. In like manner, an advance guard can prevent a retreating enemy from destroying a bridge, or making preparations for defence at the head of a defile; its fire will either stop these operations, or delay them, until the infantry comes up. In this manner the French dragoons, having dismounted, prevented the British, in the retreat to Corunna, 1808, from blowing up the bridges of Puente Ferreira and Berleira; also, in 1811, a regiment of dismounted cavalry protected the retreat of two other regiments of the same service, through a defile near Usagre: but, in such cases, the cavalry soldier acts as a skirmisher, does not leave his position, fires from behind some natural or artificial obstacle, and it is seldom that he is engaged against other troops than dismounted cavalry like himself.

CHAPTER VI.

ON ARTILLERY.

The term artillery is made use of, at the present day, to express the science of constructing and making use of firearms which are not portable. Although the several nations of Europe differ as to the details of artillery, yet they all agree in the principle of endeavouring to unite lightness of construction with power of projecting weight of at least a certain calibre. For, if it is of importance that, in action, large projectiles should be made use of, it is almost of greater importance that the guns, required for these projectiles, should be moved with rapidity, and not impede the manœuvres of the other branches of the service.

Napoleon, in his memoirs, observes, "Gribauval has made great reforms, he has simplified much; but the artillery is yet too heavy, too complicated; it must be still further simplified, rendered more uniform, and reduced, till it becomes perfectly simple." This idea has been exaggerated by some artillerists, who would wish to have but one uniform gun in the field;* such a system, however, is impossible, for as soon as one nation had adopted a gun of a certain calibre, its neighbour would introduce a heavier one. Besides, what calibre should be adopted? If it is one light enough for mountainous countries, it will be useless in many situations where the enemy would bring, perhaps, 12 and 18-pounders into the field as guns of position; on the other hand, if the maxim be adopted, that, in an action, a 9-pounder is equal to a 12-pounder* as to its effects, yet, even then, a 9-pounder is too heavy on many occasions.

---

* Nouveau Système d'Artillerie de Campagne, par le Capitaine Favé, publié par autorisation du Ministre de la Guerre, 1851.

What has been stated, with reference to the principles on which small-arms are constructed, refers also to that of guns; besides which, the effect of recoil on the gun-carriage must be taken into consideration; for, if a gun is not made sufficiently weighty to resist the effect of the charge, it will strike violently against its carriage, which will consequently be destroyed after a few rounds.

In the British service, these considerations have led to the adoption of the following pieces of ordnance for field service.

	GUNS.			HOWITZERS.	
	Length.	Weight.		Length.	Weight.
12-pr.	6′6½″	18 cwt.	32-pr.	5′3″	17½ cwt.
9-pr.	5′11½″	13½ „	24-pr.	4′8½″	12 „
6-pr.	5′	6 „	12-pr.	3′9$\frac{1}{16}$″	6½ „
3-pr.	2′7⅘″	2¼ „			

For the same reason that infantry is formed into battalions, and cavalry into squadrons, artillery is organized into batteries.

A battery is a determinate number of guns, manœuvred by a determinate number of men.

It is calculated, that a battery should consist of eight pieces, that is, six guns and two howitzers;† this being the number to the management of which a company of artillery of 100 men is adequate; and it is one quite sufficient for individual command and responsibility in the field. The number of rounds per gun, required to sustain an action of some duration, regulates the number of ammunition waggons to accompany each battery, independently of a reserve. The number of horses for each carriage, in the English service, is calculated at six, by taking the average strength of horses and the nature of the country which artillery is required to act upon. It is not that, on entering on a campaign, six horses are absolutely necessary for drawing each carriage; nor that, if travelling on high roads, with good stabling and forage, such a number might be necessary at all: but, when the whole of the cattle are exposed to all the inclemencies of the weather, both by day and night, traversing a country in all directions, whatever may be its nature, with perhaps but a precarious supply of forage, and that, defective in point of quantity as well as quality; having also, occasionally, after a hard day's march, to scour miles of country in quest of this necessary sustenance; in such cases, the powers of the animal will, notwithstanding every care, be brought down in a short time to a much lower scale than, under other circumstances, might be reckoned upon.*

---

* Jomini, Précis de l'Art de la Guerre, chap. vii. art. 46.

† At present, in the British service, it is only five guns and one howitzer.

For service in the field, English batteries are of four descriptions: foot field batteries, horse field batteries, mountain artillery, and batteries of position.

Foot field batteries consist of six pieces; five 9-pounder guns, and one 24-pounder howitzer. The men can be mounted, when necessary, upon the gun-limber and the ammunition waggon. This system is by many considered to do away with any necessity for horse artillery. It is true, that the greater mobility given to the foot batteries has, to a certain degree, annulled the necessity for horse artillery, on many occasions; for the field batteries can now make rapid marches, and take up positions with great celerity: but, to enable the gunners to keep up with their guns, the ammunition waggons must do so likewise, which on many occasions would prove a serious inconvenience. Such cases would occur, when the artillery of an advanced guard had to reach the head of a retreating column, and batter it in front, whilst the cavalry took it in rear; or when, on emerging from a defile, some guns must rapidly take up a position, and by their fire keep the enemy in check until the troops have time to deploy.

---

* Report of the Sub-Committee appointed for the purpose of making a revision of the several equipments in the British service; together with remarks on this report by the Duke of Wellington, then Master-General. See British Indian Military Repository, vol. v.

The 9-pounder field gun at present in use in the British service, with its carriage and limber, weighs above 38 cwt.; the total weight, therefore, with the men mounted on the limber, will be about two tons; the ammunition waggon, with the men mounted, will be about the same. To draw this weight with the rapidity and steadiness required in artillery manœuvres, will require, on a level road, at least four horses; on an ordinary bye-road, the force of traction required is four times greater; and, on a loose sandy road, ten times greater.* From this may be calculated the difficulty of dragging guns over bad roads often covered with obstacles; thus, at the battle of Nivelles, in 1813, the only British artillery which could be brought into action against the redoubt of Louis XIV., was Captain Ross's troop of horse artillery, on account of the difficulties which the ground presented after passing Sarre.†

Horse artillery batteries consist of five 6-pounder guns and one 12-pounder howitzer. All the gunners are mounted, with the exception of two who sit on the gun limber. The importance of this branch of the service is of very recent origin; and its advantage consists in its being able to be brought up with rapidity, at any moment of the action. All guns are necessarily expensive and complicated machines; but if, either from the want of locomotive power, or of skill to bring them to a desired point, or from any defect in their management when they shall have reached it, they fail of doing execution, then their expense becomes a dead loss. Whoever will estimate the probable value of a gun and its attendant equipment, by the time it is brought into the field, will be convinced that it is bad economy to stop short of anything which will ensure efficiency.*

---

* Essay on Draught. Society for the Promotion of Useful Knowledge.

† Napier's Peninsular War, vol. vi.

Mountain batteries consist of three 3-pounder guns, and a 4⅖-inch howitzer. In cases of difficulty of roads, they can be carried on mules' backs; as the carriages and ammunition-boxes are made to fit on pack-saddles. Batteries of position consist of five 12-pounder brass guns, and one 32-pounder howitzer; and are so termed, because, from the weight of the pieces, they are usually placed in a position whence they will not have to be moved again during the action.

Either as an offensive or defensive weapon, artillery is one of the most important branches of modern warfare; yet it is entirely a dependent force; that is to say, its purpose is to support the attacks of infantry and cavalry, or to defend these when attacked; not to be independent of the other branches of the service: and though Napoleon, at Wagram, formed a battery of one hundred pieces of cannon, and made it act, as it were, as an independent corps, yet it was in reality merely to give him time to form a fresh order of attack.† Its tactics must, therefore, be looked upon as universally connected with those of infantry or cavalry. In the above-mentioned battle, the guns of Bondet's division were captured, through having become separated from its support.‡

Artillery, when in an engagement, should take up such positions as will enable it to direct a heavy fire on the enemy, protecting itself, at the same time, as far as possible, from that of the enemy; but, as it has to support the other troops in the attack, and to protect them in a retreat, such positions cannot always be selected. Whence, the art of posting guns in the field divides itself into—

---

* Remarks on the Organization of the corps of Artillery in the British Service, 1818.

† Jomini speaks strongly against the use of artillery in masses, quite overlooking the point that these masses are, in reality, merely secondary to the subsequent movements of infantry and cavalry, either for defensive or offensive movements.

‡ *Mémorial de l'Artillerie*, No. vi. p. 149.

1st.—How to select the most advantageous positions.

2nd.—How to make the most of a certain determinate position.

The choice of positions for artillery in an attack depends on the maxim, that the enemy should be induced to scatter his fire as much as possible, so as to lessen its effect on the point whence the attack is to be made, and to vitiate the resistance which would be opposed to it, were all his force duly directed on that one point.

From this rule it follows, that, 1st,—The guns should be so placed as not to inconvenience the movements of the troops which they support.

2nd.—Artillery should avoid taking up such a position as would draw the enemy's fire on the other troops; on the contrary, it should endeavour to turn it off from them. Of all positions, therefore, which artillery can occupy, the most advantageous will be those forming a re-entering angle, or an arc, of which the concavity is towards the enemy; for then the latter can only oppose a divergent fire to a convergent one. It is true that, by this formation, the wings would be exposed; but, if not defended by natural obstacles, they can always be so by retrenchments, redoubts, or guns of position. As soon as the fire of the guns makes angles so acute that the troops cannot form an order of attack, the guns must abandon their position and be brought forward, although the ground in front may not afford so good a position. A natural consequence of this is, that troops should not be placed in rear of the batteries which they support, but in columns on the flank, with their reserve well in rear of the battery.

3rd.—The line of fire of the guns should cross the enemy as obliquely as possible: their troops formed in line should be taken in flank; a single column, in front; and several columns advancing together, both in front and flank. Whenever an opportunity offers of directing a few pieces in the rear of a body of troops, it should be done at once, as nothing affects *the moral* [illegible] of men so much.

4th.—The ammunition should be spared as much as possible, in a field of battle.

5th.—Artillery, advancing to the attack, should never move without being properly supported: on the other hand, to enable it to act as a support, it should have the communications in front of its position perfectly clear, and on no account be masked to the right or left.*

6th.—Artillery fire should never, at the beginning of an action, be directed upon those points which it is intended to attack.

7th.—As a general rule, artillery should never fire over the heads of the troops whose movements it protects; as this would be apt to intimidate them, and give the enemy two objects to fire at, instead of one. It is, however, not always possible to avoid this inconvenience in certain positions of mountainous districts, where the troops, amassed in the valleys, must be protected in an attack by the artillery placed on the heights in their rear, from whence it can discover the enemy's position; as also in the passage of rivers, when the bank which the army is master of commands that occupied by the enemy: and, although, in such cases, batteries should endeavour to cross their fire in front of the troops, without the necessity of the projectiles passing over their heads, still, the nature of the ground will not always allow of this.

8th.—Howitzers should never be used if guns can answer the purpose required.

9th.—Guns of heavy calibre should always support those of lesser, and be brought into action as soon as the range of the latter becomes insufficient.

When acting on the offensive, artillery should be in strong masses, to strike a decisive blow upon a single point of the enemy's position; but it must not be so when on the defensive. For guns become useless, if that position, in which they were amassed, be not attacked; whilst the remainder of the front would be denuded of artillery; besides the risk incurred, if that position were attacked and carried, of losing at one blow the greater part of the artillery: it was owing to this disposition that the Austrians lost the battle of Leuthen, in 1757.* Therefore, when on the defensive, artillery should reinforce the weaker points, so as to compel the enemy to direct his attacks upon those which can offer the greatest resistance.

---

* *Military Maxims of* Napoleon, by d'Aguilar, p. 46.

1st.—The wings or flanks of any position taken up by an army should be protected by field guns of the heaviest calibre.

2nd.—The line between the wings should form a re-entering angle.

3rd.—If the batteries posted at the wings are at too great a distance from the centre to afford it a proper defence, guns should be placed at the intermediary points.

It is a generally recognized principle, that, in all military positions, when the centre is attacked, it must derive its support or defence from the wings. If the position is of too great an extent, and the wings are too distant to afford an efficacious support, certain intermediary points should be chosen and determined beforehand, which would act as *redans,* and consequently, form salients to the line occupied by the troops.

These points should also afford each other a mutual protection and support. It may, however, occur, that batteries are altogether isolated and left to their own defence; such as, for example, in defiles, valleys, mountain gorges, and in all very salient angles, when they cannot be supported by flank fires. In such cases, artillery must rely entirely on the accuracy and efficiency of its fire; which should be executed steadily and calmly, the guns pointed with precision, and the battery surrounded with all the defences which art is capable of suggesting.

4th.—The artillery line of fire should be as oblique as can be to the front of the line which it defends, so as to cross its fire as much as possible. The troops must, therefore, combine their movements, so as not to paralyse the fire of their own artillery; for, if their guns were obliged to cease firing in any particular direction, the enemy would then unite his forces upon this point.

---

* Decker's Seven Years' War.

5th.—Care should be taken, that, in endeavouring to post the artillery to the greatest advantage, the army is not made to extend itself too far.

6th.—Guns should be masked as much as possible, till the moment they are brought into action. This can be done, on many occasions, by keeping them concealed behind any rising ground or natural obstacle which may be in the neighbourhood of the position they are to occupy.

7th.—In many positions, there should be a reserve of light field guns, usually horse artillery; for, as it is a principle in artillery tactics, that guns in the field should concentrate their fire upon some particular body of troops, and not upon the opposite batteries, there would be no other way of diverting the enemy's fire from the point assailed, than by bringing up a certain number of guns rapidly to take the enemy's batteries in flank. Although this ought not to check the enemy, it will almost always succeed in doing so. From this proceeds the principle, that guns should not be scattered along the front of a line, but united in masses; so as not only to allow of the heaviest firing on particular points of the enemy's line, but, also, of (in case of a battery being taken in flank) a certain number of guns being brought to bear against this unexpected attack, whilst the remainder can still be directed upon the former points.

8th. Every position should have its communications in every direction perfectly free: for it must always be borne in mind, that there is no position from which it may not be necessary to effect a retreat.

9th. Once a position has been determined on, every advantage should be taken of the nature of the ground; the guns should be placed so as to command the enemy as much as possible, yet, at the same time, they should be protected from his fire, if that can be done.

A gentle slope is the most advantageous ground to have in front of the battery. The harder the ground is, in front of the enemy, the more efficacious the ricochet fire will be. The more open the country is, the more accurately will the distances be calculated.

When artillery can be allowed to choose the positions which they are to occupy, they should endeavour, if possible, to select such as have, in front of them, to a distance of from fifty to one hundred and fifty yards, ground unfavourable to the effects of the enemy's fire. These are to be found in hilly districts, intersected by heaths, ravines, or gullies, which cross the enemy's line of fire at right angles, or on soft marshy ground, where the enemy's shot would sink. Sometimes ground is found, forming a terrace of from six to ten feet elevation; guns placed some twenty paces in rear of the rise will be as safe as if surrounded by an intrenchment: for, if the shot does not penetrate into the terrace, but strikes just at the top, it will ricochet over the battery. At the battle of Eylau, two Prussian guns, commanded by M. Decker, were thus posted; and, although opposed to the fire of a French battery of 12-pounders, it lost but one horse, whilst the French lost five waggons blown up and several pieces dismounted: but, of the several hundred shots which the French fired, five-sixths went over the battery, and the remainder stuck into its slope.

As a natural consequence, if the enemy's artillery has occupied such a position, he must either be induced to change it, or the attack must be directed from the flank.*

10th. Great care should be taken not to waste the ammunition, as in many cases, fresh supplies cannot be obtained, and the expenditure in an action is often enormous. The expenditure of ammunition by the British artillery at Quatre-

---

* *Traité* Elémentaire d'Artillerie, par E. Decker. (Peretsdorf's edition.)

Bras, was 974 rounds; and at Waterloo, 9417. The small arms ammunition on both these occasions, amounted to 987,000 rounds.

On the night following the battle of Lutzen, May 1813, the commandant of the allied artillery reported, that the corps which had been engaged during the day had expended all their ammunition, and that the reserve was so far in the rear, that it could not be replaced by the ensuing morning. It was, therefore, impossible to renew the engagement next day, and a retreat upon Dresden became indispensable.*

We thus find that, as an offensive weapon, a large battery, well-directed, pours destruction into an enemy's line, and gives it up as an easy prey to the troops which attack it. As a defensive weapon, its effects are still greater; for the enemy, marching on to the battery, will be subject to a murderous fire. "In general," said Napoleon, "there is no infantry, however brave, who, without artillery, can march with impunity a thousand yards against sixteen pieces of cannon, well-directed and well served; before marching two-thirds of the way, the men will have been killed, wounded, or dispersed."

When on the defensive, horse artillery, whose tactics necessarily partake of those of cavalry, is in a situation less congenial to its spirit, than when attacking. Foot artillery will probably defend a position with greater tenacity than horse artillery, although the greater facility which the latter possesses of escaping from the enemy should induce it to make a longer defence; but the foot artilleryman naturally acquires the solidity and firmness of infantry, and these qualities do not pertain to a service which can retire with impunity, and rapidly return to the charge. The foot artilleryman knows, that, unless he draws back his pieces some time beforehand, or abandons them, he cannot expect to escape from cavalry: therefore, in many cases, he has no other alternative than to defend himself to the last extremity; and this has been seen in many cases where gunners have been sabred on the guns, which they would not leave. The horse artilleryman in danger of a charge of cavalry, naturally looks to his horse as a means of escaping: from thence arises less tenacity in the defence; but, on the other hand, greater boldness in the attack.

---

* War in Russia and Germany, by Major-General Cathcart. Book ii., chap. ii. pp. 133, 135.

When the artillery defends infantry squares, the guns should be placed a little in front of the angles, and pointed in the direction of their capital, or their fire should be crossed in front of the faces. When the enemy's cavalry approach the squares, the gunners take refuge within them, or throw themselves between the wheels, lie under the carriages, and sometimes defend themselves with their carbines, handspikes, and spunge staves. Batteries when attacked by infantry or cavalry, must keep up their fire as long as possible, for the nearer the enemy approaches, the more destructive the fire will be. At the same time, the batteries should retire before the position which they occupy can be attained.

How long does an enemy take to reach a battery? This question is easily solved, as it depends on the position occupied by the battery, and the obstacles which the ground in front may present. Infantry, at a quick pace, will go over 650 yards of ground in seven minutes, and in about five, at a double; cavalry takes two minutes to go over the same space, on the generality of ground: these will give the primary data of a calculation, easily made, as soon as a position has been reconnoitered.

Batteries of reserve usually consist of horse artillery, on account of their being able to attain any position with rapidity, and their being less liable to be fatigued than field batteries. It is by making use of these batteries at the proper moment, that the fate of an engagement may be decided.

When an army has sustained a defeat, the batteries which have suffered the least should be placed at the rear guard;

they support the cavalry, which, especially in a retreat by echelon, should be well flanked by it. The artillery of the rear guard is usually formed into two divisions; one being placed at the head, the other in rear of the column. The latter division comes into action from time to time, to delay the pursuit: if the road is a defile, the guns must keep on the road; otherwise, they should follow along the sides of the road, so as to cross their fire upon it.

Sometimes artillery itself retreats by batteries or fractions of batteries in echelon. This was done at Albuera, 1811, by the French artillery, which, placed at the left wing, kept back the centre and right wing of the Anglo-Spaniards, protected the retreat of its army, and then made its own, supported by the cavalry.*

Horse artillery is a powerful support to cavalry, when the latter has to march through defiles to reach the enemy. Forced perhaps to form near the latter, and exposed to being charged during such formation, cavalry will have nothing to fear, if, in such critical situations, it is accompanied by a well horsed artillery, ably led by an officer who can seize, at a glance, a suitable position. It is evident that much experience is required for an officer to make such a reconnoissance, when there is hardly even time for reflection.

Horse artillery, having produced the effect required of it, does not follow up cavalry in its attack, but takes up a position, to cover its retreat if it is driven back, or to be able to push forward to support it in case of success.

The artillery of the advance guard should not follow the leading detachment too closely, but so as to have time to place itself for defence, in case the latter fall into the enemy's hands.

Commanding officers often require that the artillery fire should begin at too great a distance: either because they are ignorant of the range of the guns, or are not good judges of distances; or, because they fear the approach of the enemy. But in this, they commit a serious error: for, if the firing begin when there can be no certainty in striking the object aimed at, the enemy, receiving little or no damage by it, despises this fire, and its confidence thereby increases; while on the other hand, the troops no longer place theirs in an artillery which causes the enemy no loss, and uselessly wastes an ammunition which, perhaps, bad communications will prevent being easily replaced.

---

* Victoires et Conquêtes. Vol. xx., p. 236.

One of the most important subjects, with respect to artillery in the field, is its conveyance; many districts possess no roads fit for such a purpose, and this often obliges a general to send his artillery by a different road from the one taken by the army. Such was the case with Sir John Moore, on his march to Salamanca, and with General Moreau, in his retreat to the mountains of Genoa, in 1799. It is at all times a dangerous movement, only excusable in a case of emergency: and, in an enemy's country, it would be impracticable; for, though the artillery is of course escorted by a certain number of infantry or cavalry, it cannot be looked upon in any other light than that of a convoy.

When a great convoy of artillery is ordered to make a forced march, Decker gives the following example as one which should be followed on such occasions. In 1807, the artillery of the *corps d'armée* commanded by General Lestocq, was ordered to make a forced march from Kœnigsberg to Tilsit, a distance of eighteen German miles. The convoy consisted of 99 guns, which, with their waggons, &c., formed a column of about 250 carriages. The bridge equipment had taken another road as far as Labian, but was obliged to join the convoy at that point, on account of a bridge which was there. The convoy was divided into eight sections, which started one after another: the first left Kœnigsberg at two o'clock in the afternoon, made a march of two German miles, then formed on the side of the road, where it halted two hours to feed the horses. During this time, the other sections continued their route, and placed themselves successively along the side of the road at from 2000 to 3000 paces distance from one another. As soon as the eighth section had passed the first, the latter resumed its march, and, about ten o'clock at night, reached a bivouac five German miles from Kœnigsberg; each section resuming its march, as the first passed it. Through these measures, the second day at twelve o'clock, that is to say, in seventy hours, the whole convoy had crossed the Niemen and bivouacked in the meadows of Baublen.

In 1805, the Austrians afforded an example directly contrary to the preceding one. Their grand park of artillery had to retreat from Ulm to Egra, in Bohemia. Numbering upwards of three hundred carriages, it was formed in one long straggling column; and marched day and night, constantly harassed by the enemy, never halting, and neither forage nor rations being served out. The consequence was, that the horses fell from sheer exhaustion, the carriages had to be abandoned one after another, and, after a march of eight days, only seventeen carriages, out of three hundred, entered Egra.*

It is, therefore, absolutely requisite that the artillery in the field should be well horsed, and that these horses should be well taken care of: † otherwise, an army may be greatly impeded in its operations, and, in event of a defeat, lose many of its guns; as was the case at Austerlitz with the Russian artillery, which, from their small horses being unable to extricate themselves from the mud they had sunk into, lost the greater part of their guns.

Rivers sometimes present great difficulties for the passage of artillery, when they possess no permanent bridges: the banks may be of such a nature, that slopes must be cut, and the effect of tides and winds may cause such a degree of pitching, in boat and pontoon bridges, that the guns must be drawn over by men; and sometimes these tides and winds render the passage impossible. In wet weather, the chesses get greasy, and the horses with difficulty keep their footing. Besides, it often happens, that, when an army might cross a river with the small means at hand, it is delayed on account of artillery, which, from its great weight, requires a proportionate strength in the construction of the bridge.

---

* Traité Elémentaire d'Artillerie, par E. Decker. (Peretsdorf's edition.)

† Wellington Despatches.

Whatever obstacles are encountered, it should be remembered, that they will always be overcome by men of determination, when others would give way, and perhaps let their guns fall into the enemy's hand, without ever attempting to save them.

When Bonaparte marched into Italy, in the year 1800, having reached St. Pierre, at the foot of Mount St. Bernard, great difficulty arose as to the transport of the *matériel* of the army; there was no longer any carriage road, but only a track, from two to three feet wide, covered with snow, bordered by precipices, and liable, in the heat of the day, to be overwhelmed with avalanches.

The small-arm ammunition was partly carried by the men, and partly in small boxes placed on mules. The gun carriages and ammunition waggons were taken to pieces, each piece being numbered so as to give no difficulty in putting them together again; these were likewise carried by mules. The guns were placed in trunks of fir trees, which had been split in two and hollowed out; they were thus completely encased, and could suffer no damage from being dragged on the ground: parties of one hundred men took two days to get them from St. Pierre to St. Remy on the other side of the mountain. The horses were each led by a man.

When the guns had reached St. Remy, they were put together again, as there was a carriage road across the valley of Aosta; but, after a short time, another difficulty presented itself in the fort of Bard, which, situated at a contracted part of the valley on an elevated rock, completely raked the road with its guns, and prevented the army from continuing its march. Reconnoissances were made on the left, along the windings of the mountain of Albaredo; and, at length, a path was found which might be made use of by the cavalry and infantry. Bonaparte, aware of the importance of having at least a few guns with the main corps, ordered fifteen hundred labourers to make this path practicable for 4-pounder guns: rapid slopes were lessened by cutting steps to prevent the men from slipping; trunks of trees were thrown over ravines, which would otherwise have been too difficult to cross; and by this path, the cavalry, infantry, light field guns, and all the artillery horses, were ordered to proceed.

Meanwhile, the artillery men made a bold attempt to pass one of their pieces beneath the very guns of the fort, under favour of night; but the enemy, warned by the noise, threw fire-balls, which lighted up the road, and enabled them to pour upon it a shower of projectiles, which caused the attempt to fail. A very ingenious expedient was then tried: the road was covered with straw and dung, tow was fastened about the pieces so as to prevent the slightest sound; this contrivance completely succeeded, and all the heavy artillery was removed beyond the defile.

The passage of the Splugen, by General Macdonald, was still more remarkable. He attempted it in the depth of winter: oxen were driven before the troops to trample down the snow, into which they sank up to the belly; labourers then beat it down hard; the infantry, in crossing it, made it quite solid; and the passes were then widened by the pioneers. The artillery and heavy ammunition were placed on sledges; and, though an avalanche precipitated half a squadron of dragoons into the abyss below, and another buried one hundred men, Macdonald persevered in his attempt, and succeeded.

Since the beginning of the present century, the use of artillery in the field has become daily of greater importance.

Napoleon shewed how it could be made use of in masses, but being an artillery officer, he was aware of all its value. This will perhaps be better exemplified by a description of the

BATTLE OF WAGRAM.

Napoleon, desirous of crossing the Danube, fixed on the island of Lobau as the point for assembling his army and effecting the passage. For a whole month, the artillery was actively employed in constructing bridges and forming batteries. The latter were scattered over the small islands of Moulin, Montebello, Spain, and Alexandria; they consisted of forty 18-pounders, twenty-eight mortars which had been brought from Vienna, and several 12-pounder and 6-pounder batteries.

Whilst the French were thus occupied, the Austrians, persuaded that the enemy would debouch on to the right bank, at the re-entering angle opposite Essling, surrounded that side of the island of Lobau with a line of retrenchments which united Aspern, Essling, and Enzersdorf.

On the evening of the 4th of July, 1809, Napoleon amassed his army in that island. The Austrian artillery, placed in rear of the retrenchments, might have caused fearful havoc in this vast assemblage of troops; but it began to fire too late; and hardly had it thrown a few shells, when the whole of the French batteries directed a heavy fire against the village of Enzersdorf, destroying the neighbouring retrenchments, and silencing the Austrian artillery. The night was black and stormy. The pontooniers, by the help of the light afforded by the burning of the village of Enzersdorf, threw four bridges towards Mulhausen; and, in spite of the bad weather, the passage was effected steadily and with regularity; the troops forming line as they crossed, supporting their left on the Danube, and menacing to turn the Austrian retrenchments.

To a frightful night succeeded the beautiful day of the 5th. The Arch-Duke Charles had wished to oppose the passage of the river, so as to give the Arch-Duke John time to reach him; but the manœuvres of Napoleon having altered his plan, he abandoned his position after a short resistance, and took up another in the extensive plain between the Danube and the stream of Rusbach. The hillock which overlooked the table-land of Newsiedel, on the right bank of this stream, as well as the south side of the table-land, was lined with artillery. This formidable position acted as a support to the right wing of the Austrian army, whilst its left leant on the Danube; in the centre lay a numerous artillery, and the retrenched villages of Breintenlée, Adercklaa, and Wagram: the latter, situated at the extremity of the table-land of Newsiedel, was the point of junction of the Austrian centre and left wing.

The Emperor's plan was, first, to seize the position at Newsiedel, then to take the enemy's line in flank, and, finally, to cut off the communication between the army of the Arch-Duke Charles and the expected reinforcement under Arch-Duke John. The attack of this position did not succeed, because he was unable to maintain himself beyond the Rusbach, for want of artillery: on the other hand, Wagram, which formed the right wing of the contested position, had, after a desperate struggle, remained in the hands of the Austrians; for, though Marshal Macdonald had proceeded beyond this village, the Arch-Duke, by bringing up a strong reserve and several batteries which cut up the French ranks with a cross fire, forced him to retire in disorder.

The night of the 5th was passed, on both sides, in making further dispositions for attack. Napoleon concentrated his main force on the side of Raschdorf; the Arch-Duke, on the contrary, extended his wings, and threw up fresh redoubts in his front.

On the 6th, at daylight, the cannonade began: Prince Charles, with the certainty of being succoured by the Arch-Duke John, and encouraged by the success he had obtained the day before, opened the engagement; two of his batteries, placed in front of Wagram, took the French infantry advancing upon

Rusbach, in enfilade, and compelled it to fall back. The Prince of Rosenberg, debouching by Newsiedel, endeavoured to outflank the enemy's right wing; but Napoleon immediately sent General Arrighi's division of cuirassiers to the support of Marshal Davoust, and ordered the twelve pieces of light artillery of Nansouty's division to trot up and take the Austrians in flank. This artillery caused great loss to the Austrian columns, and enabled Davoust to repel the attack. The efforts made by the Emperor on the Austrian centre did not succeed; and, on the left wing of the French, the Austrians had obtained decided success: the Saxon corps was entirely broken through, and a large force had advanced between the French left and the Danube. Boudet's division, completely defeated, had taken refuge in the isle of Lobau, under the protection of a battery of position. The artillery of that division, placed at too great a distance from its support, was charged and taken by the hussars of General Walmoden. At twelve o'clock, the chances of victory were decidedly in favour of the Austrians; and their army, surrounding the French, occupied an immense extent of ground.

At this perilous moment, Napoleon determined to make a grand attack on the Austrian centre, whilst Davoust vigorously assailed the left wing, and the Duc de Rivoli kept the right in check. For this purpose, he united at Raschdorf ten batteries of 12-pounders of the imperial guard, four of horse, and six of field batteries; to these were added several divisional batteries, making a total of one hundred guns. Advancing by columns of batteries, they deployed at half range from the enemy, and, as each battery formed into line, it brought its guns into action. Presently, a range of fire, extending upwards of a mile, sent devastation through the enemy's ranks.

In vain did the Austrians endeavour to charge this tremendous array; each time they attempted it, their cavalry was received with such a hail of shot, that it was driven back with overwhelming slaughter: the obstacles which protected the Austrian centre were destroyed, and their guns dismounted; and the formidable battery of Aderckláa, which the Marshal-Duke of Istria had unsuccessfully tried to carry, previous to this attack of artillery, was silenced. At the same time, these results were not obtained without great loss on the part of the French artillery.

In rear of this huge battery, Macdonald formed a column of attack, composed of several divisions formed in a dense square flanked on the wings by cavalry; the horse grenadiers and infantry of the imperial guard being in reserve.

In the meanwhile, the Duke of Auerstädt, supported by sixty-four guns, was carrying on a combined attack on the wing and flank of the Austrians posted on the table-land of Newsiedel; and his artillery, covered by clouds of skirmishers, vigorously engaged the Austrian artillery which lined the crest of the table-land; whilst twelve 12-pounders, placed on a rising ground at the east, were sweeping Newsiedel and the space between that village and Wagram.

Fifty guns, placed in front of Newsiedel, had rendered this village unapproachable; and it was only when the French brought a superior force of artillery to bear upon them, that the divisions of infantry, backed by the support of their cavalry (which, having also endeavoured to charge the extreme left of the enemy, unsupported by artillery, had likewise been repulsed), could advance up the hill and take possession of this formidable position.

The Emperor, on hearing of the success at the right, ordered Macdonald to advance through the opening made in the huge battery of the centre. At a signal from Napoleon, this battery formed a salient angle, the two sides of which were turned towards Adercklaa and Breintenlée; and, as the column advanced, the two half-batteries opened fire on these villages, forcing the Austrian grenadiers who occupied them to retire.

The Duc de Rivoli had succeeded, not only in checking the Austrian right, but in driving it back to the fort of the Bisamberg; the Duke of Auerstädt continuing his movement against their left, which, as was seen, occupied the table-land of Newsiedel: but this table-land is surrounded to the west and north by the stream of Rusbach, and in the bend of this stream is Wagram. To check Davoust's movements, the Prince of Hohenzollern formed batteries along the right bank, which crossed their fire on the debouches of the table-land, principally on the high road from Wagram to Wolkendorf. Davoust attacked this fresh position in front, whilst General Cohëorn, at the head of a cavalry brigade, crossed the Rusbach, to take the Austrians in flank. The Austrian left wing was driven back, and retreated.

Prince Charles, on seeing himself menaced by Macdonald's formidable square, brought up several pieces of horse artillery; whilst the Hungarian grenadiers and Kollouvrath's corps attacked it vigorously. In vain did Nansouty's cuirassiers and Walter's imperial horse endeavour to disengage it: they were constantly repulsed by the Austrian artillery, before they could reach the batteries. The Emperor at once sent thirty pieces of artillery to Macdonald's assistance, which came into action supported by Sahuc's division of cavalry, the chasseurs of the guard, the light horse, and the divisions Pacthod and Durutte. Macdonald reached Sussenbrun and Gerarsdorf; the Austrian army was obliged to retire in every direction; and, in its retreat, was followed up by the artillery, which occasioned immense losses.

Besides the example which the battle of Wagram affords, of a large mass of artillery striking a decisive blow, it is worthy of attention, as to the use of artillery when combined with the other branches of the service. Thus, the capture of Boudet's artillery points out the danger of isolating batteries from their supports. The losses sustained at the second assault of Newsiedel shew that columns of attack must be supported by artillery, to destroy the enemy's batteries. Finally, the ill-success of the cavalry charges, both at the first and second attack of the Austrian left wing, shews that cavalry should not charge masses of the enemy, until they have been well shaken by artillery.

Let us also remark the importance of guns of position in the defence of the villages: Newsiedel, Aderclaa, Wagram, and Breitenlée, were so many bastions, not only connecting the several Austrian corps, but acting as supports; their conquest was only effected by means of a numerous artillery, and at great cost of life. Not content with fortifying these villages situated in front of his position, the Arch-Duke had also lined Gerarsdorf with artillery in rear of the position. This village was protected by heights, which were also covered with artillery. The resistance which this fortified point offered to Macdonald was most formidable, and enabled the Austrian centre to retire with glory. The Prince of Hohenzollern also shewed a bright example, by forming the artillery beyond the Rusbach, and crossing its fire upon the debouches of the table-land of Newsiedel to check Davoust's advance; but, unfortunately, he did not take the precaution to cover his left flank.

FRANCE.

CALCULATION OF A FORCE OF ARTILLERY FOR A CORPS OF 12,000 MEN.

Strength of Batteries.	Nature of Ordnance.					Spare Gun Carriage.	Ammunition Waggon.				Ball Cartridge Ammunition Waggon.	Store and Tool Waggons.	Forge Waggons.	Total of Carriages.	Spare Ammunition Waggons in the Park.
	Guns.		Howitzers.				Guns.		Howitzers.						
	12-pr.	8-pr.	6"	24-pr.	12-pr.		12-pr.	8-pr.	6"	24-pr.					
1 Batry. of 12-prs. position.	4	„	2	„	„	2	12	„	6	„	„	2	2	30	2
„ 8-prs. foot.	„	4	„	2	„	2	„	8	„	4	6	2	2	30	2
„ 8-prs. horse.	„	4	„	2	„	2	„	8	„	4	2	2	2	26	2
„ 12-prs. Mntn. Howtz.	„	„	„	„	6	1	„	„	2	„	10	4	1	22	„

In a *corps d'armée*, there are :—

2 batteries of 12-pr.	60	carriages.
6 „ 8-pr. foot.	180	„
4 „ 8-pr horse.	92	„
Spare Ammunition waggons in the Park.	24	„

DIMENSIONS OF FIELD GUNS.

Field Artillery, Nature of.	Length of bore in Calibres.		Weight of piece in lbs.	Charge.	
Gun 12-pr.	16·82		1947	⅓	Weight of shot.
Gun 8-pr.	16·82		1278	⅓	
Howr. 6"	11½ button of cascable not comprized	10· of the chace.	1947	⅐	
Howr. 24-pr.	11⅓	9·9	1278	⅐	

Powder consists of 75 Saltpetre, 12·5 Charcoal, 12·5 Sulphur.
Carriages have poles instead of the shafts.

CALCULATION OF A FORCE OF ARTILLERY IN BAVARIA FOR A *CORPS D'ARMÉE* OF 27,000 INFANTRY AND 5,100 CAVALRY.

Nature of Battery.	Nature of Gun.				Würst Amm. Waggons.	Ammunition Waggons.	Spare Gun Carriage.	Forges.	Tool Waggons.	Total Carriages.
	Guns.		Howitzers.							
	6-pr.	12-pr.	Lt. 7-pr.	Hy. 7-pr.						
6-pr. B. .	6	...	2	...	9	5	1	1	2	26
12-pr. B. .	...	6	...	2	...	17	1	1	2	29

For a *corps d'armée* . . { 6, 6-pr. battery, 156 carriages.
3, 12-pr. „ 87 „
72 guns—total 243 „

The 12-pr. battery occupies a medium position between the English field batteries and their batteries of position. The men are on foot.

The 6-pr. battery is their light field battery. The limbers of the guns and ammunition carriages carry three men each, and five more sit cross-legged on each ammunition limber. This ammunition waggon is termed *würst-munitions-wagen*.

The guns are of bronze, and cast for a charge of one-third weight of shot. The pole is used with a swinging bar. 10-pr. howitzers form guns of reserve.

The powder consists of 75 saltpetre, 12½ charcoal of white alder, and 12½ sulphur.

SWEDISH FIELD BATTERIES.

Nature of Battery.		Guns.	Howitzers.	Ammunition Wagons.				Spare Gun Carriages	Forage Wags.	Forge and Tool Wagons.	Spare Carriage.	For Sick.	Total Carriages.
				Guns.		Howrs.							
				12-pr.	6-pr.	24-pr.	12-pr.						
12-pr. Horse		8	...	8	...	...	...	1	5	1	1	1	25
6-pr.	Horse	6	2	...	3	...	1	1	5	1	1	1	21
	Mount^{d}.	6	2	...	3	...	1	1	5	1	1	1	21
24-pr. Howr.		...	2	...	...	12	...	1	5	1	1	1	29

In Sweden, the artillery differs in many points from that of other nations. Cast iron is used for field as well as garrison guns. A spirit-level is attached to the tangent-scale, which, though it affords increased accuracy when the ground is not level, complicates the gun, which, on service, cannot be too simple.

Nature of Gun.	Length of bore in calibre.	Weight of piece.	Charge in weight of shot.
12-pr.	16·7	1551 lb.	$\frac{2}{7}$
6-pr.	17·4	840 „	„
24-pr. Howr.	10·845	1566 „	$\frac{2}{9}$
12-pr. „	10·880	824 „	$\frac{1}{5}$

Powder is a private manufacture; but there is a parish in Dalekarlia which has the privilege of making it. It consists of 75 saltpetre, 15 charcoal, 10 sulphur.

SPANISH FIELD ARTILLERY.

Carriages.	Guns.			Howr.
	12-pr.	8-pr.	4-pr.	6-pr.
Gun Carriage and Limber	6	6	6	6
Spare Gun Carriage	1	1	1	1
Ammunition Waggons, at the rate of 3 per gun in 12-pr. and Howr. Bat.; 2 per gun in 8-pr. Bat.; 1½ in 4-pr. Bat.	18	12	6	18
Forges	1	1	1	1
Baggage Cart	2	2	2	2
Horses or Mules, 8 for each 12-pr.; 6 for each 8-pr., 4-pr., and Howr.; 4 for each other carriage	150	114	90	138

Proportions of gunpowder in Spain—77 saltpetre, 8 sulphur, 15 charcoal.

BRITISH FIELD BATTERIES.

	Field Batteries.				Mountain Artillery.		
Nature of Battery . „ Howitzer .	18-pr. 8-pr.	12-pr. 32-pr.	9-pr. 24-pr.	6-pr. 12-pr.	3-pr. $4\frac{2}{5}$-pr.	3-pr. $4\frac{2}{5}$-pr.	1-pr.
No. of guns pr btry.	3	5	5	5	3	3	4
„ howtrs. „	1	1	1	1	1	1	
Gun ammntn. wgns	9	10	7	6	*	*	*
Howitzer „	4	2	2	2			
Spare gun carriage	1	1	1	1			
Forge waggon	1	1	1	1	†	†	†
Store „	2	2	1	1			
Store cart	1	1	1	1	‡	‡	‡
Platform waggon	1	0	0	0			
Total carriages	23	23	19	18	4	4	4
No. of rounds per gun	180	148	166	223	165	108	232
„ per howitzer	112	114	114	236	96	72	

* Ammunition carried on mules. † A forge on back of two mules.

‡ There ought to be a small cart, drawn by two mules, for a spare wheel, mules' shoes, stores and tent, &c.

DUTCH FIELD BATTERIES.

Nature of Battery.	Gun Carriage and Limber.		Ammunition Waggon.			Battery Waggons.	Forge Waggon.	Spare Gun Carriages.			Total of Carriages.
	Guns.	Howtzrs.	6-Pndr.	12-Pndr.	Howtzrs.			6-Pndr.	12-Pndr.	Howtzrs	
12-pounder B.	8	„	„	8	„	2	1	„	2	„	21
6-pndr B. horse	6	2	6	„	2	2	1	1	„	1	21
„ foot	6	2	4	„	2	2	1	1	„	1	19
Howitzer B.	„	8	„	„	8	2	1	„	„	2	21

DIMENSIONS OF FIELD GUNS.

Field Artillery, Nature of.	Length of Bore in Calibre.	Weight of Piece in lbs.	Charge.
Guns. 12-pr.	15	1958	⅓ Weight of Sh
Guns. 6-pr.	16	1045	⅓
24-pr. howitzer.	15		⅛

Carriages have poles instead of shafts. Howitzers have no chambers.

WURTEMBERGIAN FIELD BATTERIES.*

Nature of Battery.	Guns.	Howitzers.	Waggons.			Forges.	Total Carriages.
			Cartridge Ammunition.	Howitzers.	Battery Waggons.		
Horse Artillery, 6-prs. .	6	2	9	4	2	1	24
Foot Artillery, 12-prs. .	6	2	9	4	2	1	24

---

* Jacobi. Artillerie de Campagne.

PRUSSIAN FIELD BATTERIES.*

Nature of Battery.	Guns.		Howitzs.		Wggns.		Spare Carriage.	Forges.	Total Carriages.	Numb. of Officers and Men.	Numb. of Horses.
	6-prs.	12-prs.	7-prs.	10-prs.	Guns.	Howitzrs.					
Horse Battery . .	6	"	2	"	2	2	2	1	15	171	222
Foot Field Battery.	6	"	2	"	2	2	2	1	15	162	114
Battery of Position.	"	6	"	2	6	4	2	1	21	220	166
Howitzer Battery .	"	"	8	"	8	"	2	1	19	190	138

12-pr. guns and 10-pr. howitzers have eight horses; the remainder, six.

Weight of Guns and Howitzers.

	lb.
6-pr., with Carriage and Limbers, filled with Ammunition, Foot Field Battery	4134
Do., Horse Battery	4041
12-pounder	5324
7-pounder, Howitzer	3718
10-pounder, "	4398

RUSSIAN FIELD ARTILLERY.

Nature of Battery.	Guns.		Howitzers.		Ammunition Waggons.	Forge and Baggage Waggons.	Horses.
	6-prs.	12-prs.	10-prs.	20-prs.			
Horse Battery . .	6	...	2	...	8	3	209
Foot Field Battery	6	...	2	...	8	3	142
Battery of Position	...	4	...	4	12	4	120

One heavy and two light field batteries, under a field-officer, form a brigade of field artillery.

---

* Decker's Aide-Mémoire.

Two troops of horse artillery under a field-officer, a brigade of horse artillery.

The brigades have commissariat carts attached to them, which, with the spare gun-carriages, &c., are in charge of the train of artillery, but under the command of the officer commanding the brigade.

AUSTRIAN FIELD ARTILLERY.

Nature of Battery.	Guns.		Howitzers.		Waggons.	Horses.
	6-prs.	12-prs.	7-prs.	10-prs.		
Field Battery . . .	6	...	2	...	8	150
Cavalry Battery . . .	6	...	2	...	24	180
Battery of Position . .	...	4	...	2	...	...
Rocket Battery, 12 tubes, 4 officers, 210 men, 86 horses.						

The batteries attached to the cavalry are on the *Würst* principle.*

---

* For the Russian and Austrian artillery, compare Spectateur Militaire, January 1842, with Colonel Chesney, on fire-arms, 1852.

CHAPTER VII.

STRATEGY, AND TACTICS OF THE THREE ARMS UNITED.

STRATEGY is the science of warfare; that is to say, it is the science by which a general is enabled to trace the plan of a campaign, determine the positions which it is absolutely necessary to be master of in order to attain the aim proposed, and fix the direction in which the communications should be established.* Thus, when Marshal Turenne, in order to defeat the Imperialists with greater certainty, allowed them to take up their winter quarters in Alsace, then, retiring into Lorraine by the defile of Petite-Pierre, secretly marched behind the Vosges mountains, and debouched suddenly through Befort into the midst of their cantonments, surprised them, defeated them at Turkheim, and forced them back across the Rhine, he left a fine example of strategical combinations.

Strategical positions are those which influence a campaign in a direct manner, by the decided advantages which they confer on the possessor; these advantages only become evident when a position protects its line of communication, or when it is probable that it will be supported; when the enemy dare not leave it in their rear with impunity, or when it is at the junction of several lines of communication; finally, when it gives a moral influence to the possessor.† For instance, Pampeluna, a strong fortress, at the entrance of the valleys of

---

* Principes de Stratégie, vol. i., chap. 1.

† Prin. Strat., vol. i., chap. iii. *Napier's Peninsular War*, vol. i., Appendix.

Roncevaux and Bastan, at the junction of the roads of Biscay (through Tolosa,) of Arragon and Castille (through Tudela, Alfaro and Estella,) is a strategical position which a Spanish army should occupy against any invasion from France.

The moral influence of a position giving it a strategical importance, was curiously exemplified, by the retreat which the allies made upon Schweidnitz after the battle of Bautzen, in May, 1813. This position consisted of a strong entrenched camp, having its right near the fortress of Schweidnitz, and its left resting on the Bohemian mountains. The Emperor of Austria had as yet preserved a strict neutrality, but the allies were aware that he would soon join their cause, and Napoleon, half suspecting his design, and unwilling to bring him to a decision by forcing the allies to retreat on to the Austrian territory, which they would have been obliged to do, in case of defeat, accepted an armistice.*

The physical appearance,† as well as the geographical position of a country, points out the strategical positions: very few will be found in open accessible plains, or in mountainous countries, where, generally, lines of communication are scarce; they abound more in hilly and woody countries, intersected with roads, rivers, canals, &c.

In a war of invasion, strategical positions are of three kinds: 1st. One or more points, closely connected one with the other, upon which the magazines of all kinds necessary for the army are collected; these are termed the base of operation; 2nd. Those which act as intermediary points; 3rd. Those which it is intended to take possession of, form the objects of operation.‡

In defensive warfare, these same positions act in an inverse ratio: the first protect the entrance of the exposed provinces; the second delay the progress of the enemy, either by menacing his communications, or by open resistance; and the third serve as magazines and depots.

---

* The War in Russia and Germany, 1813, by Major-General Cathcart, book ii., chap. v., vi.

† Prin. Strat., vol. i., chap. iii.

‡ Prin. Strat., vol. i., chap. iii., v.

Of all the intermediary lines between two strategical positions, those which present the greatest advantages for establishing the communications are termed strategical lines. These advantages are; 1st. That the communication should be secured by strategical positions, and protected by the movements of the army, which shall not deviate from the strategical lines; 2nd. That they should be the shortest, not only in length, but in the time occupied in going over them, according to the nature of the country, and condition of the road; 3rd. That they should be practicable for every branch of the service destined for the intended expedition.*

When the English army was to be withdrawn from the position of the Huebra, November, 1812, its general was anxious about the result, because the position of the Huebra, though good for defence, was difficult to remove from at this season: the roads were hollow and narrow, and led up a steep bank to a table land, which was open, flat, marshy, and scored with gulleys; and, from the overflowing of one of the streams, the principal road was impassable a mile in rear of the position. "Knowing this, Lord Wellington directed the divisions by another road, longer, and apparently more difficult; this seemed such an extraordinary proceeding, to some general officers, that, after consulting together, they deemed their commander unfit to conduct the army, and led their troops by what appeared to them the fittest line of retreat! Meanwhile, Wellington, who had, before day-light, placed himself at an important point on his own road, waited impatiently for the arrival of the leading division until dawn, and then, suspecting something of what had happened, galloped to the other road, and found the would-be commanders, stopped by that flood which his arrangements had been made to avoid." †

The direction taken by an army to reach the object of operation, is termed the line of operation: the direction by which an army obtains its supplies is its line of communication.

---

* Prin. Strat., vol. i., ch. iv. † Napier's Peninsular War, vol. v.

When the British forces, under Sir Charles Napier, invaded Scinde, in 1842, Roree, near the river Indus, was his base of operation; Kheyrpoor, his object of operation; the Indus and the road from Roree to Ferozepoor were his lines of communication. The flight of the Ameers to the southward having altered his plan, Hyderabad became his object of operation, upon which he advanced after destroying Emaum Gurh, a strong fortress which lay on his left, and from whence the enemy might have cut off his base. The road from Kheyrpoor to Hyderabad, through Deegee-ka-kote and Nowshere, was his line of operation. After the battle of Meánee, 7th February, 1843, Sir Charles took up a position on the Indus in rear of Hyderabad, which he strengthened by forming an entrenched camp; this position became his base of operation, and the Indus his only line of communication.*

The consequences of military events are of such importance, that the first duty of a general is to unite all the means which may ensure the success of his enterprize; it is, therefore, absolutely necessary that the army should be in possession of the provinces from which it derives its supplies, as well as the roads which facilitate their conveyance. This principle forms the base of strategical combination, and should never be deviated from.

If an army obtains its supplies by sea, a strong position on the sea-coast is formed, where both the depots and shipping are well protected.

In 1810, the defence of Portugal having been determined on, it was necessary that a strong base of operation should be formed before any future operations could be decided on; and to effect this, it was requisite to find a position covering

---

* Napier's Conquest of Scinde, part ii.

Lisbon, where the allied forces could neither be turned by the flanks, nor forced in front by numbers, nor reduced by famine; each of which would have rendered an embarkation necessary; and, besides, it was requisite to keep up free communications with the irregular troops closing round the enemy. The mountains which cross the tongue of land upon which Lisbon is situated, furnished the foundation for this base; and, upon them, three distinct ranges of defence were erected.

The first, extending from Alhanbra on the Tagus to the mouth of the Zizandre, on the sea-coast, was, following the inflections of the hills, twenty-nine miles long; the second stretched from Quintella on the Tagus, to the mouth of the St. Lorenza, twenty-four miles in length; and the third, intended to cover a forced embarkation, extended from Passo d'Arcos on the Tagus, to the Tower of Junquera on the coast.*

The positions occupied by an army are only of use so long as the enemy cannot avoid them, and occupy others, without either being forestalled or delayed in his march, attacked on his flank or rear, having his communications cut off, &c. Consequently, the positions occupied by an army, as well as the movements of that army, should protect—1st. The key of the country intended to be protected; 2nd. The base of operation, which is to be formed; 3rd. The free communications with the magazines which are to be established on that base; and, finally, the line of operation which will be taken to reach the object of operation.

Let us suppose two armies occupy two positions, *a* and *b*; the army at *a* having to protect all the extent of country in rear of a line *c d* passing through *a*, whence a perpendicular *a b* separates the two armies. We see that the lines of operation which the army at *b* will have to follow, in order to reach the positions *c* or *d*, or any collateral position, being the hypothenuses of two right-angled triangles, will necessarily be longer than the distances which the army at *a* will have to go over to forestall the army from *b*.

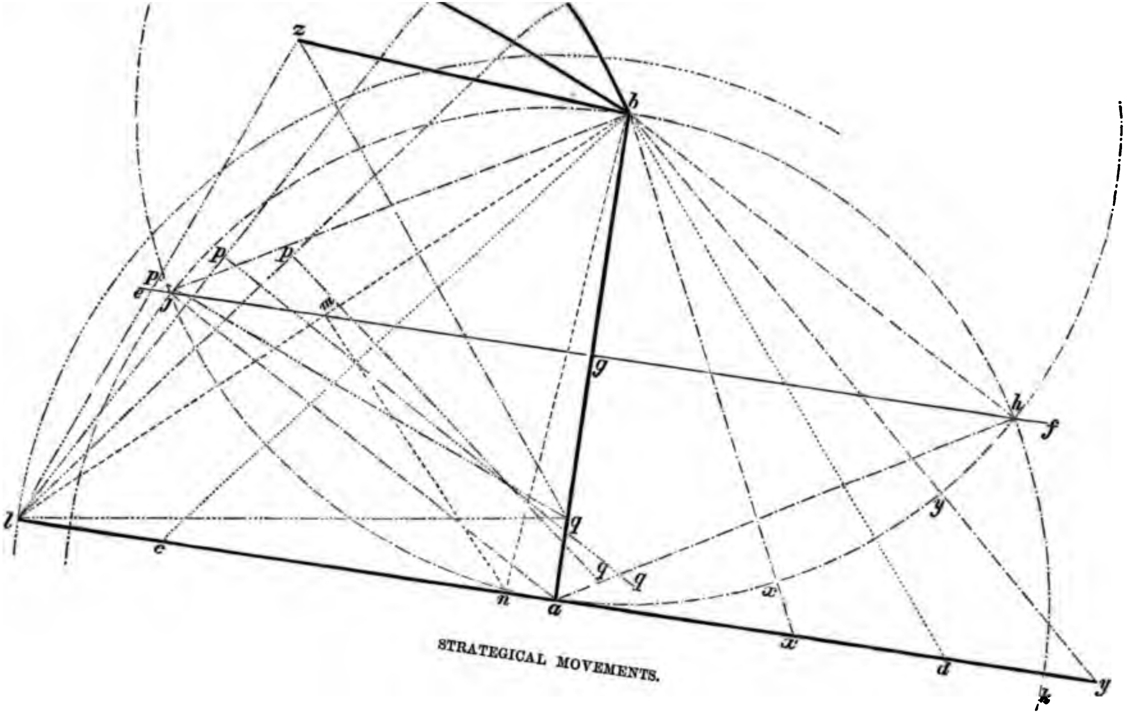
---

* Napier's Peninsular War, vol. iii.

The army at *a* will also protect the country situated in rear of a line *e f* cutting perpendicularly, at the centre, the distance which separates the two armies; as the army from *a* can be at the point *g* of intersection as soon as the army from *b*.

If an enemy, marching from a position *b*, must necessarily, in case of defeat, &c., direct his retreat through that same position, then an army at *a*, taking up its position upon the tangent of a circle having *b* for its centre, and *a b* for its radius, will protect all the extent of country situated at the exterior of the circle; because, the enemy, when beyond this circle, being at a greater distance from *b* than *a* is from *b*, the army at *a* would have time for getting to *x* or *y* before the enemy, or for cutting off his line of retreat by marching upon *b*, in case he directed his line of operation beyond the equilateral triangles *a h b*, *a j b*, to reach his object of operation, which the army at *a* could not reach in the same time. Consequently, if it is requisite to protect the position *a* from the enterprizes of the enemy at *b*, the army protecting it will not be able to extend its operations beyond the circle *j f k* , of which *a b* is the radius, without compromising the safety of the position *a*, as the enemy would be able to reach it before it could be relieved.

An army which would attempt to advance from *a* through *c* as far as *l*, whilst the enemy was at *b*, *b* being nearer to *a* than *a* is to *l*, would expose both the position *a* and part of its line of operation. For, join *l b*, and from its middle point *m* draw a perpendicular *m n* cutting *l a* in *n*, and join *n b* : *l n* and *n b* being the hypothenuses of two right-angled triangles having their other sides equal, *n b* is equal to *l n* : therefore, *b* is nearer to any position on the line of operation *a n* than *l* is.



STRATEGICAL MOVEMENTS.

Consequently, before the army from *a* can with safety continue its movement through *c* upon *l*, the enemy must be made to fall back upon a position *z*, so that the position *a*, and all the line of operation *l a*, be beyond contact with the perpendicular *p q* drawn from the middle point of the line *l z* towards the line of operation *l a*. Supposing the triangle *l q z* to be equilateral, and, therefore, *l q* equal to *q z*, it will follow, that an enemy, wishing to profit by the movement of the army from *a*, to menace its communications, would have more road to go over than the army of *a*, from *l*, to fall back on its position.

In general, the safety of the position *a*, as well as of the line of operation *l a*, requires that the enemy should not be able to undertake any operation on the flank of this line *l a*: to effect this, the enemy must be kept beyond a circle of which *a l* is the radius, and *a* the centre; so that all the perpendiculars *p q* drawn from a position which is central between the object of operation *l* and the position of the enemy at *z*, should not touch the line *l a*.

However, as the calculation of the time necessary to reach the position intended, does not only take in the length of the road, but also, obstacles which may be thrown in the way of the movement, such as a river, fortress, &c.; it is sometimes not necessary to force the enemy back, if these obstacles are able of themselves to delay his approach.

These preliminary observations will suffice to give an idea of the measures required to be taken to insure the safety of an army. But, these measures once taken, nothing should prevent a general from acting with the greatest vigour, when confidence in his means of success induces him to carry on an offensive war, or from defending his position with determination, when circumstances reduce him to this necessity; both the one and the other of which would be impossible to him, if he neglected these principles.

Deviating from these principles, Napoleon, in his campaign of 1813, made Dresden, after the battle of Kulm, his centre of operations: by this measure, he left the line of communication, with the Rhine as its true base, at the mercy of his enemies.*

When a nation is determined on war, the troops destined for the formation of an army are either assembled at the frontiers bordering on the country to be invaded, or at some seaport-town, where the troops are to sail from; or the rendezvous is given for the several divisions to meet at some point of the theatre of war. In 1808, the army destined for the war in Portugal consisted of a corps under Sir A. Wellesley, to embark from Cork; two divisions under Brigadier-Generals Acland and Anstruther, to sail from Ramsgate and Harwich; General Spencer's corps from Cadiz, and Sir John Moore's from the Baltic. These several corps were to unite at the Tagus, under the command of Lieut.-General Sir Hugh Dalrymple.†

A field-marshal or a general officer takes the command of the troops thus united, and divides the army into the several divisions and brigades he thinks proper, if this has not already been done by the government.

In an English army, two staff officers are appointed, in addition to the commander-in-chief, who relieve him of part of his onerous duties. These are a deputy adjutant-general, and a deputy quartermaster-general. To the former belongs everything constituting the efficiency of the army, such as the daily state of the troops, their clothing, discipline, &c. The latter has the charge of embarking and disembarking troops, their march, the direction of the localities to be occupied; all correspondence relative to maps, plans, dispositions for defence, &c., are transmitted to him.‡

---

* War in Russia and Germany, 1812—13, Major-General Cathcart.

† Wellington Despatches, vol. iv.

‡ General Foy's Guerre de la Péninsule, vol. i. H. M. Regulations for the Army.

The chief officers of the commissariat, of the medical department, of the treasury, provosts, surveyors, &c., form part of the staff of the army, and remain with the head-quarters, from whence they receive their orders, transmitting them, in their turn, to those under them in the several divisions.

The artillery and engineers have each their separate staff, which directs the *personnel* of these services as well as the detail, works, and movements of the parks: but the general orders relative to these are sent direct from head-quarters. The officers commanding field batteries and companies also receive orders from the generals commanding the divisions to which they are attached.

Armies in the field are usually organized into brigades, divisions, and *corps d'armée*, according to their numerical strength and the nature of the country they are intended to act in. Two regiments at least, of infantry or cavalry, form a brigade. Two or more brigades form a division. Each division has a staff proportioned to its strength, at the head of which are two field officers, who exercise, towards their own divisions, the same functions that the deputy quarter-master-general and the deputy adjutant-general exercise towards the whole army.

It is advisable to avoid forming the several divisions of an army, of the same number of battalions or squadrons; otherwise the enemy, becoming acquainted with the strength of one, would know that of each of the other divisions. This is one of the principal defects of the Russian and Prussian systems.

Some generals prefer that there should be three brigades in a division; because, if required to act by itself, there could be two units in line and one in reserve; whilst, if there were only two brigades, there could only be a fraction in reserve, which is not so advantageous.*

---

* Jomini. Précis de l' Art de la Guerre, chap. vii.

It is important that the organization of an army on service, when once established, should not be altered on slight grounds during the progress of a war; for the habit of fighting together, and of seeing and assisting each other under all circumstances, creates, in the several corps composing each fraction of the army, a confidence and an understanding which contribute powerfully to their success. Generals have time to know their troops, and, in their turn, are appreciated by them.* It was to these causes that the French owed much of their success in the campaigns of 1805, 1806, and 1807, when the generals were at the head of the same troops that they had commanded the preceding years in the camps established on the French coasts.

To each division are attached, 1st. One or several batteries of artillery, calculated, generally, at two guns for every thousand men, and a reserve in the parks; † 2nd. One or more companies of sappers; 3rd. A brigade of gendarmerie; 4th. An assistant-commissary, with men, employed for procuring provisions and forage; 5th. A medical staff.

When very large armies are brought into the field, several divisions are united together under one general. By this means, the command is more concentrated, as the authority is in fewer hands. These are termed *corps d'armée*. These corps have each their own staff and parks of reserve, and are completely organized as a separate army.

When an army is too large to allow of all its movements being watched by the commander-in-chief, and not large enough to be formed into *corps d'armée*, it is organized into right and left wings, a centre, and a reserve. It was thus Moreau formed the army of the Rhine, in 1796, and Bonaparte that of Italy, in 1797.

In some cases, it is desirable to have two or three divisions united under a general officer of superior rank, who should be able to assist in the plan of the commander-in-chief, without awaiting his orders. Picked companies have often been united to form separate corps. The Austrians have even adopted this system in time of peace. By the Prussians, with whom it was formerly in favour, it has been abandoned; for the inconveniences it gave rise to were very serious. Regiments lose their moral courage, when the best soldiers, whose example animated the remainder, are taken away: besides, they become numerically weaker, as these picked companies, if more exposed than others, require to be constantly recruited, and thus regiments are drained of their best men.

---

* General Orders of F.M. the Duke of Wellington, by Lieut.-Col. Gurwood, 1832, p. 346.

† *Ibid.* p. 346.

To an army on the march are attached parks of artillery, for sieges, &c., with the *personnel* and *matériel* for bridges and pontoons. In some countries, the pontooniers form a separate corps. There are also parks of intrenching tools, waggons for provisions, medical chests, and carts for the sick. For a war in mountainous countries, brigades of mules or other animals are organized, and employed instead of waggons.

The first consideration for a general with an army on service is, how he is to obtain supplies for his troops; and it is with respect to this matter that the Duke of Wellington displayed his preeminent abilities as a commander, calculating always the number of his army, not upon what was requisite to oppose the enemy effectually, but, upon what he could provision with certainty.* Yet, even with all his forethought, he was not always able to overcome the difficulties which the deficiency of supplies presented. On his retreat from Salamanca to Cuidad Rodrigo, in Nov. 1812, he lost some two thousand stragglers in one day, owing to the hungry soldiers breaking from the columns to shoot the swine, of which vast herds were found on the line of march: it was in vain that the staff-officers rode about to stop these disgraceful proceedings, and that even two offenders were hanged; the feeling of hunger predominated over that of discipline.*

---

* Napier's Peninsular War, vol. iii.

The modes in which supplies are obtained may be classed as follows:—

1st. The government to which the army belongs, paying for the subsistence of the troops, and furnishing the provisions; 2nd. The government paying for the supplies, which are furnished by the country in which the army acts; 3rd. The army obtaining its own supplies by forced requisitions.

As the second of these cases presents no great difficulty, we shall restrict our attention to the first and third. The supplies necessary for an army are, 1st. Provisions; 2nd. Ammunition, field-tools, &c.; 3rd. Medical comforts; 4th. Pay and accoutrements.

An army entering upon a campaign, cannot prudently set out without a supply of biscuit for at least a few days. A certain quantity is carried in the waggons belonging to each division, or on beasts of burden put into requisition; and the soldiers are likewise provided for three or four days. Rapid movements are thus made with greater ease, and the army is better able for a time to keep together in those positions where it is unable to obtain supplies, either on account of the country being unproductive, or from delays occurring in the arrival of convoys.

When an army is acting as an ally, and is paid and provisioned by its own government, great care should be taken to prevent the troops committing any act of plunder which might aggrieve the people of the country. The magazines which are formed along the line of operation should be supplied from the depots at the base of operation, or the stores be punctually paid for, if furnished by the people of the country. When the British troops landed in Portugal, in 1808, each man was provided with four days bread and two days meat; besides which, a quantity of bread, equal to a consumption of 10,000 men for three days, was carried with the army. A further supply was sent on to Leyria, a distance of about seventy miles, consisting of bread and spirits for ten days, and meat for five days: on the march to Vimeiro, wine and beef were obtained from the country; but the cattle with which the army was fed, had to be obtained from the north of Portugal, as all the cattle in the country through which the army passed were used for draught. Arms, ammunition, clothing, ordnance, flour, oats, sheets for the hospitals, &c., had to be brought from England. Sir Arthur Wellesley had not only to provision his own troops, but the Portuguese too. When he advanced into Spain, in 1809, the situation of the army became very serious, for want of provisions: the Spaniards, far from assisting him with supplies, threw every obstacle in his way; and, before obtaining any, Sir Arthur was obliged to promise that they should be replaced from the stores in Portugal.*

---

* Napier's Peninsular War, vol. v.

When an army invades a country, the inhabitants supply the soldiers cantoned with them, from the resources they have amassed for themselves, or furnish, on the spot, the requisitions for provisions and forage. In almost any country, if troops are well conducted and payment is sure, the inhabitants will furnish the necessary requisitions. When it is foreseen that an army will unite in masses, and that the local resources will not suffice, magazines are formed by means of requisitions: this is done by application to the local authorities, who are ordered to see these magazines properly filled; and their exactions are supported by an armed force. Frequently, bargains are made with contractors, and these are paid by contributions levied on the inhabitants. For the supply of fresh meat, large droves of cattle follow the army.

But it may be asked, how is it that the portion of country taken up by a numerous army, should be able to satisfy all its wants? Why is it not constantly threatened with famine? This is explained by the improved state of the wheat and other cereal crops in a vast proportion of Europe, and by the numerous population spread over it. It is computed that there are in Europe, on an average, 140 inhabitants to each square mile; but this proportion is exceeded on most parts of the continent. Let us suppose an army of 100,000 men divided into four columns, following four different roads, these columns having to unite again at a certain point; and allow fifteen miles as the space they occupy, a space very moderate for a march of concentration, and often exceeded in a manœuvring march. We shall find that, if the line of march is eighteen miles in length, it will have embraced a space of 270 square miles. But the columns forming the wings, may, if required, extend their requisition for provisions two miles further; thus 342 square miles will be comprized. At a moderate calculation, the population covering this extent of country will be about 40,000. Generally, each rural family, as well as the bakers of the towns, are provided at least for one month; to this may be added the stores of the wholesale merchants, and those reserved for the supply of man and beast, until the ensuing harvest, by the agriculturist. It is clear, then, that an army, though consuming more in proportion than the same number of inhabitants, will certainly find twelve days provisions; and, whilst the army consumes what it finds on the spot, there will be time to procure more in the surrounding country for the supply of the magazines: the inhabitants will, of course, bring in more supplies for their own subsistence; and thus, unless the army prolong its stay, the country will always offer plenty of resources. This system of provisioning troops requires that severe discipline be maintained, in order that there may be no waste of those supplies, the deprivation of which would be cruelly felt, if a retrograde movement had to be made in the country already despoiled.

---

* Wellington Despatches, vol. iv., v.

The system here laid down is, in reality, only practicable in fertile countries, such as France, Belgium, Italy, and Germany; although some privations may be felt in the less densely populated districts. In Spain, where there are generally but 66 inhabitants to the square mile, and even for these corn has to be imported, it is indispensable to form magazines at certain points, and that armies should carry provisions with them. Yet even then the want of proper communications renders the transport of provisions for large masses impracticable; the troops must have recourse to pillage, and thus a new enemy is created, for the irritated inhabitants naturally take up arms to defend their property.

Poland and Russia, still more thinly populated even than Spain, present the same difficulties both as to food and communications; and, although the potato affords an important resource in Poland, and that the towns on the Vistula have a large commerce in grain, yet the Russians and French suffered fearfully in the winter campaigns of 1806 and 1807, because both armies were very numerous, and disputed for a length of time the same ground. Such circumstances become still more appalling, when the inhabitants fly from the line of road, and carry off their provisions, &c., as in the French invasion of Portugal, in 1810, and that of Russia, in 1812; when neither guides nor beasts of burden could be found. Under these circumstances, detachments must be sent off to a distance from the line of march, to procure food and forage; thus additional fatigue is imposed on the men, who, when dispersed, often loiter and lose themselves. Sometimes they fall into the hands of the enemy, or are murdered by the people; sometimes they voluntarily remain and live with them.

One of the most instructive lessons, on this subject, is afforded by the campaign to Affghanistan, in 1839. When it was in contemplation to place Shah Soojah on the throne, Mr. Mountstuart Elphinstone, who was well acquainted with the country, made this observation: "If you send 27,000 men up the Durra-i-Bolan to Candahar, and can feed them, I have no doubt you will take Candahar and Caubul, and set up Soojah; but, as for maintaining him in a poor, cold, strong, and remote country, among a turbulent people like the Affghans, I own it seems to me hopeless." His prognostics were but too well verified, and the real history of the march is to be found in the commissariat department.*

The Bengal column which left Shikarpoor, February 20th, 1839, numbered about 15,500, but the camp-followers were so numerous that there were about 100,000 people to feed.† Supplies for a month and a half were taken with it, a similar quantity being left in the depot; ‡ yet, on the 3rd of March, there was already a scarcity, and supplies were ordered from the rear; but difficulty arising in bringing them up, the non-combatants were placed on half-rations on the 8th. On the 28th, the want of grain began to be so severely felt, that the native soldiers were placed on half rations. On the 5th of April, the camp followers were living on the fried skins of sheep, roots, &c. On the 26th, the head-quarters reached Candahar; but the cavalry and horse artillery had been put on half rations since the 24th of March, and the horses had had no grain since the 30th, so that, for twenty-six days, they subsisted on such green forage as might be procurable, and often on very bad grass.§

At times, on the march, it had seemed equally impossible to Sir Willoughby Cotton to stand still or move forward. Even on famine allowances, his troops only reached Candahar with half rations for two days. When he had got to Quettah, all the provisions stored there and in the surrounding villages could have lasted but a few days. The consequence of this want of provisions was, that the troops plundered the country belonging to the Khan of Khelat, causing excessive damage to the crops, and making enemies of the people. There were two different commissariats (the Bengal and the Shah's) sometimes to be found bidding against one another. Everything was paid for at ruinous prices, and, from scarcity and neglect, 20,000 cattle had died between Ferozepoor and Candahar.*

---

* Kaye's Affghanistan, vol. i.

† Hough's Army of the Indus, 1838-39, p. 34.

‡ *Ibid.* p. 37.

§ *Ibid.* p. 95.

But if the commissariat arrangements were defective on the march, they were much more so after the troops were placed in cantonments. At Caubul, the head-quarters of the commander-in-chief, the system of the two separate commissariat establishments, viz., Shah Soojah's and the British, was continued, but neither of the depots was placed in security. The British depot was in a fort situated about 400 yards from the cantonments, with another small fort intervening. Yet, on the breaking out of hostilities, the insurgents were allowed to possess themselves of the latter: the consequence of which was, that, as soon as the communication between the commissariat fort and the cantonments was cut off, the garrison of the former had to evacuate it after a short siege. The commissariat fort of Shah Soojah was also at a distance from the troops which it was intended to supply; and, though the latter occupied the Balla Hissar, within the town, their supplies were stored on the outskirts of the city, and its defenders, being unsupported from the cantonments, had also to evacuate it. Had it not been for the active exertions of two most intelligent commissariat officers, Captains Johnson and Boyd, the troops must have starved; and they were happily favoured by circumstances, for the villagers round about sold the grain which they had laid up for their own winter supplies, at no very exorbitant rate; but the troops had still to be put on half rations. This was on the 8th of November, 1841.

On the 8th of December, the commissariat officers wrote to General Elphinstone, that, "from personal knowledge of the country to the north or north-east of cantonments, we have to report the utter impossibility of obtaining, either by force or otherwise, the smallest quantity of grain or forage of any kind within a distance of from three to four miles." Mr. Mountstuart Elphinstone's prognostics were thus at last verified; and this scarcity of provisions caused the celebrated retreat from Caubul, when, of 4,500 fighting men and 12,000 camp-followers, but one man escaped death or captivity to tell the tale.*

---

* Kaye's Affghanistan, vol. i.

When an army has received its definitive arrangements, when its parks are completed and properly cattled, its magazines filled, the hospitals supplied with every necessary, it is ready to take the field. Each infantry soldier should have two pair of shoes in his knapsack, each cavalry soldier an extra pair of horse shoes, and each cavalry regiment, a forge. If these measures are not insisted upon, many men and horses will remain behind, and be unfit for service, after a few days' march. From neglect of these precautions, according to General Thiebault, 2000 dragoons and chasseurs who left Bayonne on the 1st of June, 1807, only mustered 600 strong on arriving at Lisbon, the 1st of December of the same year.

If it is requisite to feed the soldier, it is no less so to see that he is not over-fatigued unnecessarily, which is but too often done. The length of a march, therefore, should not be made to depend upon what the more active portion of the army can perform, but should be based upon the maxim, that the column ought to arrive in good order on the halting-ground; and to do this, due consideration must be attached to the physical condition of the troops in general. At the present day, the infantry is heavily accoutred, and it takes many months of actual service before it gets accustomed to move rapidly with the heavy weight of the present musket and knapsack.

---

* Kaye's Affghanistan, vol. ii.

The total weight which a British infantry soldier has carry on service, exclusive of any provisions he may have to take with him, is,

	lb.	oz.
Knapsack	29	8
Musket	10	0
Bayonet	1	0
Sixty rounds of ball cartridge	6	9
Accoutrements	4	2½
	51	3½

A column of infantry can, therefore, only be calculated to march about two and a half to three miles an hour on ordinary ground, and from three to four miles by hurrying; but, in the latter case, there will be stragglers. It is, however, sometimes absolutely necessary to make forced marches, and for this, it is usual to select the regiments most inured to fatigue. Such a body of infantry, marching from twenty-five to thirty miles a day for several days, following up the retreat of a defeated army, would make numerous prisoners, cavalry as well as infantry; for horses require more time for feeding and repose than men. In the French campaign of 1805, in Germany, a body of Austrians, who had escaped from Ulm, endeavoured to reach Bohemia. They were pursued by several divisions of dragoons and the companies of grenadiers united, under the command of General Oudinot. The grenadiers marched as much as thirty-five miles a day, and, by allowing the enemy's cavalry no rest, facilitated their capture by the dragoons.*

Marches are of two kinds: first, strategical marches, made beyond range of the enemy; that is to say, when the main body of both armies are separated by a distance of at least two marches: secondly, tactical, made in presence of the enemy, either for the purpose of attacking or retiring.

---

* Jomini. Précis de l'art de la Guerre, chaps. iii. and vi.

With the present system of marching, the calculation of time and distance in strategical marches has become very complicated: the several divisions of an army frequently having different roads to go over, their time of departure and their instructions must depend, 1st, on the distance they have to go over; 2nd, on the kind of *matériel,* more or less cumbersome, which is taken with each column; 3rd, on the nature of the country, more or less difficult; 4th, on the information that has been obtained as to the nature of the obstacles which the enemy may oppose; 5th, on the degree of importance which may be attached to keeping the march secret.

All details which tend to prescribing, every day, to the several generals commanding corps, the manner of forming their columns and placing them again in position, are a pedantism more hurtful than useful. It is certainly necessary that a strict eye should be kept to their marching according to the regulations that have been laid down; but full liberty must be allowed them in organizing their movements, so long as they arrive at the hour and place appointed. However, in retreats, which may be echeloned upon one road, precise measures should be taken as to the time of departures and halts.

Every army requires that a corps, less numerous and more active than the main body, should precede it at some distance, in order to clear the roads, follow up the movements of the enemy, warn the army of any ambush, and reconnoitre the country: this corps is termed the advance-guard. If, unexpectedly, it meets the enemy, it should offer a firm resistance; so as to give the main body time to take up a position for defence, or to prepare to attack the enemy, who, but for the advanced guard, might have attacked the columns before they had time to deploy, and perhaps destroyed them.

An army has, therefore, generally, an advanced guard. This precaution is taken, either when the several divisions of the army march close together, or when it is desirable to give them the time to do so; when the army is concentrated near the enemy; or when the latter is retreating in any one direction: sometimes, also, when it is intended to mask an attack upon the enemy's flank by a corps strong enough to keep him in check. When these circumstances do not exist, it is usual to place a small advanced guard at the head of each column, which fulfills, with respect to it, the same duties that belong to the advanced guard of the whole army. In some cases, there are both separate and general advance-guards.

An army retreating, should likewise have a strong rear-guard, to keep back the victorious army, and give the columns time to rally: and, if it is necessary that an advanced guard should be composed of brave and well-disciplined troops, these qualities are still more requisite in those forming a rear-guard, which should never in any way yield to the discouragement that a retreat generally diffuses through an army.

When an army is advancing, its columns generally have for their rear-guard only a few troops intended more to keep the stragglers up with the main body, than to watch over the safety of the column; as it is supposed that no enemy has been left in the rear or on the flanks: but if this happen to be the case, a strong rear-guard, composed chiefly of light cavalry, should be formed.

The number and organization of the several columns composing an army, depend on the number and nature of the communications, which allow of the troops marching on a more or less extended front, and on the nature of the country, which may or may not allow of all the branches of the service being employed; besides, the general commanding has his own plans which may lead him to form one column stronger than another, or to give it more or less artillery or cavalry.

There are, however, examples of very large bodies of troops marching in a single column. The most remarkable is that of the French army pressing the retreat of the Russians on Smolensko, when more than 130,000 men and 20,000 horses were united: they marched on the road, and on the sides of the road through the crops; whilst another column of 40,000 men was at the distance of two leagues, and directed to the same point. The Russians also formed but one column of 80,000 men. The road was of considerable breadth, and passed through a flat country, though wooded and intersected by rivers.

When an army marches in several separate columns along separate roads, within reach of the enemy, it is highly important that each column should be strong enough to defend itself until it can obtain a reinforcement from the others, and that there should be communications between the roads followed by the several columns, to allow of these reinforcements being sent. Neglect of these precautions led to the disasters experienced by the Arch-Duke John at Hohenlinden, the 3rd December, 1800. His army was formed into four columns, which had to cross the vast forest of Ebersberg, at the debouch of which Moreau had united the French army. The Austrians advanced during fearful weather, through a thick forest, their columns having no means of communication with each other; the principal column was first attacked, both in front and rear, and, being unable to deploy, was cut to pieces; the other columns were successively attacked, and shared the same fate; and the army had to retire with the loss of 12,000 men and 100 pieces of cannon. The Austrians, however, did not profit by this severe lesson; for the general who had counselled this unconnected movement, repeated it with the Austro-Russians at Austerlitz, where it had no better success.

No fixed rules can be given as to the minutiæ of an order of march which depends on so many different circumstances; but three principles should be strictly attended to.*

1st. The several branches of the service should afford each other mutual protection, and their position on the line of march should depend on the nature of the country.

---

* Lallemand. Oper. Secondaires de la Guerre. Liv. iv.

2nd. The order of march should be such, that by short, simple, and rapid movements, it can become the order of battle.

3rd. That at no time, and under no pretext whatsoever, should the slightest deviation from the strictest discipline be permitted. For, once it has been allowed, the soldier will almost claim it as a right.

There is a system of march known by the term *flank march;* and it is thus named because the army, or a division of it, moves parallel to its front, so as to form order of battle on the flank of the line of march. Each line must therefore form a separate column. These marches are only dangerous when they become tactical. They are seldom made; but, if so, must be protected by natural obstacles, or by heavy bodies of troops placed between the army and the enemy, to prevent the latter attacking the marching army before it can take up a position: thus, Frederic the Great succeeded at Leuthen, by making use of a march of this kind; but the army was protected by heavy masses of cavalry, concealed by heights, and directed against an enemy which remained motionless in its camp. Marshal Ney, however, failed with it at Dennewitz, and Marshal Marmont at Salamanca.*

By the science of marches is understood a combination of marches intended to carry out the principal strategical operations of a war: † this will be better understood by the following examples.

In 1799, the Austro-Russian army, under the command of Suwarow, occupied the following positions. Suwarow was at Turin, Bellegarde was watching the debouches of Genoa, Kray was besieging Mantua and the citadel of Milan, General Ott was with a corps of observation upon the Trebbia, in the neighbourhood of Placencia.

---

* Jomini. Précis de l'art de la Guerre, vol. i., chap. iii., art. 24. Traité de Tactique par le Marquis de Ternay, revu par F. Koch.

† Jomini. Précis de l'art de la Guerre, vol. i., chap. iii. art. 24.

The French generals, Moreau and Macdonald, occupied positions on the Apennines; the first was to debouch by Novi, and the second by Pontremoli; and both corps were to form a junction on the plains of Placencia.

General Suwarow, warned of this plan of junction, immediately marched from Turin, to place himself between the two French generals, ordered General Ott to fall back upon him in case he was attacked, and desired Kray to send him from Mantua all the troops he could spare: Bellegarde was posted near Novi, whence Moreau was to debouch, and Suwarow himself marched into the plains of Placencia to meet Macdonald.

As General Suwarow had expected, Ott was attacked by Macdonald, who was totally unaware of the Russian general having arrived, and, after an obstinate engagement of three days, the French were defeated with a loss of twelve thousand men, and obliged to retire behind the Apennines; and thus the plan of junction between the two French armies failed.*

The march which Napoleon made, in 1805, through Donawerth, to cut off Mack, is still more remarkable.

In August, 1805, when Austria declared war against France, the armies of the latter were scattered along the line of coast from Brest to the Weser, and it was necessary to bring them to the Danube before the Austrians, who had taken the offensive, could reach it. Instead of assigning some point of concentration in France, by which much precious time would have been lost, Stutgardt was indicated. The troops that were in France crossed the Rhine at Strasbourg, Lautenbourg, Spire, and Manheim, in the latter part of September. Those in Holland crossed the Rhine at Mayence; whilst Bernadotte, who had been ordered to proceed from Hanover, led his army to the Danube through Bareuth and Wurtzburg. The French columns 200,000 strong, and organized into six *corps d'armée*, besides the guards and cavalry of reserve, thus found themselves in echelon at Stutgardt and in its vicinity, and able to unite in less than two days if necessary. This movement had been masked from the Austrians posted on the Danube and Iller, by Marshal Lannes, and Murat, who, having debouched through Strasbourg, occupied the head of the defile of the Black Forest, pushed their patrols forward, and led the reconnoitering parties of the Austrians to imagine that the French were concentrating upon the sources of the Danube. After these forced marches, the French army took some repose in its cantonments.

---

* Thiers Rép. Franc., vol. x.

Napoleon, whose espionage was perfectly organized, being informed of the enemy's mistake, brought his army forward again upon the 2nd, 3rd, and 4th of October. Ney's corps, which formed the right, marched from Stutgardt through Heidenheim, and crossed the Danube at Gunzburg, leaving two divisions on the left bank, near Ulm, to keep the garrison of that city in check, whilst his main body served as a pivot to the rest of the army, and masked its movements. The other corps formed three columns: Soult's corps marched through Nordlingen, and forced the passage of the Danube at Donawerth; it was followed by those of Lannes and Murat; Davoust's corps, united to that of Marmont, surprized the passage of the bridge of Neubourg; and Bernadotte, who had been joined by the Bavarian army, crossed the river at Ingolstadt, and led his column upon Munich.

The French were thus thirty leagues in rear of the Austrian army, which was cut off from its base of operations, and its disseminated corps, everywhere obliged to fight against superior numbers, were taken or put to flight. Part of the French army watched the movements of the Russians, who, though too late, were advancing; the remainder marched up the right bank of the Danube, came back upon the Iller, and Mack was surrounded at Ulm. Sixty thousand Austrians, with two hundred guns and their parks, fell into the hands of the French. The enemy was totally disorganized fifteen days after Napoleon had taken the field.

It will be perceived, on looking at the map, that the French had fixed their point of concentration upon the right flank of the enemy, and that the slightest movement in front carried them into the lines of communication of the latter. Mack, though inferior in strength, committed the error of placing himself too far from his base: he should have waited nearer Vienna for the arrival of the Russians, and besides, he remained almost motionless during the movements of the French. In this first part of the campaign of 1805, we have not only an example of a great strategical conception formed two hundred leagues from the theatre of war, but also of a series of marches directed upon the strategical point.

It should be observed, that the left column was at Ingolstadt, thirty leagues from the column forming the right; but this was not imprudent; for, the Austrians having only 90,000 men on the Iller and in the surrounding country, the French had an immense superiority over them. Ney's corps, whilst masking the lengthened movement of the French, had the advantage of protecting their line of communication, and could have been supported by the centre which was at Donawerth. A serious mistake, however, was made by Murat, who ordered part of Ney's corps to cross to the right bank of the Danube, instead of keeping it entire on the left bank, and thereby cutting off the retreat of the Austrians upon Bohemia. Prince Ferdinand took advantage of this, and, after an honourable conflict, escaped with nearly eleven thousand men; and, although he lost the greater part of them, he was still able to join the Russians: had Mack possessed the same resolution, and imitated this conduct, he might also have escaped.

Let us suppose that an army is on the march to attack another which occupies a strong position. As soon as the patrols, which precede the advance guard, perceive the enemy's outposts, their commander apprizes the general commanding the advance-guard, who, in his turn, sends information of the circumstance to the Commander-in-Chief.

A short halt is made, the stragglers are brought up, the ranks are closed, and the march resumes regularity. The advance-guard quickens its pace to drive back the enemy's advanced posts, who first skirmish, and then fall back upon their supports; these are then boldly driven back, and, from the ground they occupied, the General-in-Chief reconnoitres the force and position of the enemy: in this he is aided by topographical maps, and by the people of the country, or by spies.

If the Commander-in-Chief is not at the advance-guard, it is the officer commanding the advance-guard who obtains all this information, and transmits it to the general commanding; at the same time, possessing himself of one or more advantageous posts that may aid the success of the attack.

Thus, Marshal Lannes, commanding the advance-guard of the army marching upon Friesland, the 14th June, 1807, led his troops out into the plains which surround that city, sustained some skirmishes with the Russian cavalry, and manœuvred his men under cover of the slopes, villages, and standing corn, so as to make them appear more numerous than they really were; and, in this manner, protected the defiles of the woods from whence the army was to debouch.

The Commander-in-Chief assembles the generals commanding the columns, and explains his plan to them, or he sends his instructions in writing: each is informed of the part he is to take in the attack, and of the moment when it is to begin. He also explains upon what point the strongest efforts are to be made, and in what direction the enemy's troops should be thrown back upon, in case of success, and, likewise, the route which the army should take in case of a reverse.

Much is left to the discretion of the generals commanding the several divisions, as it is impossible, in the present system of warfare, for the commander to observe everything that passes amongst such masses as are now brought into the field.

The Commander-in-Chief receives a statement of the number of men present in the field under arms; a number so different from that which is supposed to form the effective, that at least one fifth should be deducted from the latter in order to give a correct idea of the number of combatants: this difference is caused by the sick, deserters, detachments, &c.

The preparations required for a great battle, such as getting together the several divisions, the reconnoissance, the transmission of orders, throwing up works to open communications, place batteries, &c., do not always allow of its being given the same day that the troops come in sight of one another; as too little time would be left to profit by the success of a well-directed attack: it is, therefore, usually put off till the next day; and the troops pass the night in bivouac, in the order in which they are to engage. The arms are piled in front of the fires, the soldiers prepare their food before daylight, as they are aware they will require all their strength for the fatigues of the next day. The artillery hastily throw up small breastworks or parapets to protect the guns, the sappers make temporary bridges over streams and ravines, open breaches in the walls or hedges which might otherwise impede the movements from one wing to the other; the parks are brought up nearer the army, several divisions of waggons, to supply ammunition, and the batteries of reserve, are advanced on to the field. Such were the measures taken before such battles as those of Austerlitz, Jena, Moskowa and Waterloo.

Frequently, however, circumstances do not allow of an action being put off until the next day; the troops have to prepare for the fight, whilst the positions are rapidly reconnoitered. But battles of this kind only take place when the divisions of one of the two armies are marching close together, and the nature of the country is such as to allow of their discovering the manœuvres of the enemy. An example of this took place at the battle of Barosa. In the despatch of Lieut.-General Graham to Lord Liverpool, he says:—"My division being halted on the eastern slope of the Barosa height, was marched, about twelve o'clock, through the wood towards the Bermeja; cavalry patrols having previously been sent forward towards Chiclana without meeting with the enemy. On the march, I received information that the enemy had appeared in force on the plain, and was advancing towards the heights of Barosa. As I considered that position as the key of Santa Petri, I immediately counter-marched, in order to support the troops left for its defence: it was, however, impossible to preserve order in the columns in such difficult and intricate ground, and there never was time to restore it entirely. But, before we could get ourselves quite disentangled from the wood, the troops on the Barosa hill were seen returning from it, while the enemy's left wing was rapidly ascending; at the same time, his right wing stood on the plain on the side of the wood within cannon shot. A retreat in the face of such an enemy already within reach of the easy communication by the sea beach, must have involved the whole allied army in all the danger of being attacked during the unavoidable confusion of the different corps arriving on the narrow ridge of Bermeja nearly at the same time; an immediate attack was determined on.

"A battery of ten guns was opened in the centre, which gave time for the formation of the infantry into right and left wings; as soon as the infantry was thus hastily got together, the army advanced to a more favourable position.

"In less than an hour-and-a-half from the commencement of the action, the enemy was in full retreat."

Thus, also, the battle of Lutzen, although between two powerful armies, was an encounter unexpected by the French in their march; but none of their movements escaped the watchfulness of the enemy, who were in possession of the heights which commanded the south of the plains of Lutzen, and there was no time to prepare for battle either on one side or the other.

However, if possible, a general endeavours to select a position; and there are few subjects of greater importance in actual warfare than the choice of positions.

A position is the ground upon which an army or a body of troops halts, either to encamp, bivouac, rest, or combat the enemy. It is by an army taking up judicious positions, that an enemy is checked in his enterprizes; that his movements are inconvenienced; that his forces are divided and disseminated; that he is separated from his magazines; that his flank or rear is menaced, &c.

In presence of the enemy, therefore, a position should be definitely decided on by the Commander-in-Chief only; for if, on a march, many things may be sacrificed to the sustenance and comfort of the troops, so, when in presence of the enemy, the general must sacrifice everything to the safety of the troops, which is dependent on the successful execution of his plans.

Such positions are either offensive, defensive, or manœuvring. A position should have its front clear to a distance equal to the range of its guns, and command any rising ground in front of it; it should be difficult of access; its defence should be easily secured, by every approach being commanded by artillery; the obstacles which it may contain, especially any woods, should not be of such a nature as to fall easily into the enemy's hands, and protect his attack. If possible, the front of the position should have a concealed streamlet, or an unfordable river, so far in front as to allow of manœuvring easily, even were the whole force of the enemy to attempt the passage, and yet sufficiently close, that it may be reached in time in any direction. The enemy should not be able to execute any movements against that position, which should, at the same time, conceal those made within it.

The wings should, as much as possible, be supported by thick woods and practicable roads, marshes, rocks, fortresses, towns, or a river; and these obstacles should be such that the enemy may not turn them without being discovered.

The front and flanks should have at least as many outlets as there are divisions, to enable the general to make any manœuvres which he may desire to execute.

The rear should have safe and practicable approaches, or these should require but little labour to make them such, either for the baggage and ammunition, or for any retrograde movements of the troops.

To enable the divisions to afford each other mutual support, by night as well as by day, the corps should not be separated by natural obstacles, and should have between one another only the space required in the order of battle.

Whether for the purpose of posting the several divisions, or for the manœuvres which may become necessary, the position should not only be suited to the kind of troops, and to the number which is to occupy it, but, also, suited to the different movements which may present themselves to the general, whether he be acting by himself, or the movements of his troops be combined with those of some other corps.

When either of the wings of a position is unsupported, either by natural obstacles, or masses of troops sufficient to oppose any movement the enemy may make on the exposed flank, it is said to be *en l'air*.

At the battle of Dresden, 27th August, 1813, the position occupied by the allies was as follows:—

"On the extreme right, in the plain between the Pirna road and the Elbe, the corps of Wittgenstein; next to him, on the Pirna road, and with an advanced brigade in possession of a part of Grosse Garten, the Prussian corps of Kleist; next to Kleist, between Strehlen, Rackniz, and Plauen, the corps of General Chasteller. In front of the village of Leubniz (that is, in rear of the right centre), were posted the Russian reserves both of cavalry and infantry. The Austrian reserve was to have been stationed in the rear of Plauen, to support Chasteller; but the want of force, in proportion to the extent of front, demanded its services elsewhere. Through Plauen flows a rivulet with steep banks, named the Welsseritz. Beyond this rivulet, and between it and the Freyburg road, were the divisions of Bianchi and the corps of Giulay. Prolonging this line beyond the Freyburg road, and forming the extreme left of the whole line, was the division of Mesko, the only part of the corps of Klenau in the field. This extreme left, though thrown forward and already too much extended, derived no *appui* from the Elbe, as there was still upwards of an English mile of plain intervening; it rested, therefore, upon nothing, and was without a sufficient support of cavalry in a country favourable to that arm, and requiring the use of it—a trying situation for very young troops." *

The consequence of this formation was, that the left wing, being attacked in front, whilst its flank was charged by Murat's cavalry, 10,000 strong, was completely broken and destroyed.

This attack of the King of Naples is well worthy of attention, as exemplifying the combination of infantry and cavalry. The action of cavalry is so different from that of infantry, that the intermingling of these two branches of the service, in a small space of ground, would cause utter confusion. It must be carefully borne in mind, 1st. That each service should be able to act in totally different directions: for example, cavalry charging a body of the enemy in flank, the infantry will support it by attacking the same body in front, and *vice versâ*. On the other hand, cavalry can support infantry by forming obliquely to it, so as to charge any troops which might attempt an attack on the flank; at other times, infantry will be so posted as to support the flanks of cavalry, as at Fontenoy, where the infantry, posted in redoubts constructed in front of the French, was to support, at the moment of charging, the flank of the several bodies of cavalry posted in rear of it, and which were to charge through the intervals separating these redoubts.

---

* War in Russia and Germany, by Major-General Cathcart.

2nd. One branch can support another, when they have each to act in parallel directions, but not at the same time. If the infantry begins the engagement, the cavalry supports it by taking in flank the enemy's troops who may have attempted to take this infantry in flank: or the infantry will support a cavalry charge by an oblique fire; as at the combat of Reichenberg, in 1757, when the oblique fire of the infantry posted in the redoubts of the centre, and among the *abattis* of Jeskengebirge, supported the imperial cavalry, so that the Prussians had to sustain this fire, before they could overthrow their adversaries' cavalry.

3rd. One branch can support another, when they act in the same direction, but at different times. Thus, cavalry placed in rear of infantry, will follow up the advantage which the latter may have gained; as in the celebrated column of Macdonald, at Wagram: or, infantry will be posted in rear of cavalry in a broken country, to protect the retreat of the latter if it should be driven back.*

Every order of battle, in any position whatsoever, should be made upon two lines, whether the troops are deployed, formed into columns, squares, &c.: for, if it were not so, the first line being broken through, there would be no possibility of re-establishing the engagement.

A division is usually formed entirely in one line, so that the general commanding the division may not have to divide his attention between two lines, which would be inconvenient; or it may be necessary to change the position of the second line to protect the first: yet, in hilly or woody countries, it is better for each division to form its own second line, as, the ground for engaging being circumscribed, a general cannot, perhaps, be supported by the neighbouring divisions.

---

* Traité de Tactique, par le Marquis de Ternay, revu par F. Koch, tom. i.

Cavalry, which cannot be made use of in all countries, has not, like infantry, a fixed place in a battle. The Romans placed it exclusively at the wings. This position, adopted by the moderns, is founded upon the importance of taking the enemy in flank, when he attacks a position, or of attacking and turning his wings, when he acts on the defensive. Besides, this formation enabled the cavalry to be brought to the front without embarrassing the infantry, which was then always formed in a contiguous line. Frederic the Great, however, who possessed a well-organized cavalry, differed from it, at Lowositz, 1756, and formed his cavalry, sixty-nine squadrons strong, in three lines behind his infantry.

The positions assigned to cavalry depend much, at the present day, on the nature of the ground. Sometimes several divisions are placed behind the infantry, and in positions from whence they can be easily brought forward. By this formation, cavalry is not exposed to the enemy's fire until absolutely necessary; it is thus kept intact, and its moral courage preserved, for the moment when it is required to charge. By this means, also, the centre of the army, which sometimes is at a great distance from the wings, can be well supported. Although it is necessary to unite cavalry in large masses, in order to obtain decisive charges, yet the infantry should not be quite left without; and the Archduke Charles recommends, that several squadrons of light cavalry should be placed in rear of the first line of infantry, opposite the intervals of the battalions, in order to charge the enemy as soon as he has been thrown into disorder by the infantry fire.

Should the ground render it necessary to place the cavalry at the wings, it should not be placed on the same line with the infantry; for cavalry, before charging, must advance from two to three hundred yards; it would, therefore, be engaged with the enemy before the infantry or even the artillery fire had made any effect, and most probably would sustain severe loss. By placing the cavalry, therefore, at the second line, it will be able to act speedily on the front and flanks of the enemy, whether marching to attack or acting on the defensive.

The nature of the ground, which is of such importance in modern warfare, has several times obliged the cavalry to be placed in the centre of the line of battle: a very dangerous measure; for, if beaten, the space it occupied between the infantry may be filled up by the enemy's cavalry, and the infantry exposed to be attacked in rear. This circumstance occurred at Blenheim, in 1704, where the Allies forced back the centre of the French army, entirely composed of cavalry, and compelled the infantry, who were at Blenheim, to lay down their arms.

If it is necessary to deploy the cavalry of a wing before it engages, that it may be in readiness to charge, Jomini says, that the most advantageous order of battle, in that case, for cavalry, is to have one quarter of its force deployed, another quarter in reserve, and the other half in columns on the right and left. This general rule should be modified according to the nature of the ground, which may or may not allow of an extension, or, according to the measures of the enemy, who may or may not lay their flank open to an attack.

Many generals only make use of cavalry to follow up the success of an infantry attack; but Napoleon considered that heavy charges were as effectual at the beginning as at the end of a battle, and that to reserve them until the end of an action only, displayed ignorance of its use.

Artillery is placed according to the nature of the ground, the position of the enemy, and the views of the Commander-in-Chief, who may intend to make an effort on such or such point; but on no account should any attack or charge be made without being preceded by artillery, and the use of it against masses is becoming daily of more importance.

Well-disciplined troops are placed in reserve on advantageous positions, with convenient debouches, in rear of the line. These troops are, generally, select corps, such as guards, grenadiers, and cuirassiers, horse-artillery batteries, and 12-pounder field pieces. Good reserves powerfully influence the moral courage of the soldier, who does not fear facing danger, when he feels himself well supported; but other motives require the formation of reserves. The wisest combinations are often defeated in a war, and a general must have troops at hand to repair the evil: besides, in a protracted action, whilst the chances of success, at some decisive moment, are equal on either side, if fresh troops appear, they will decide the victory, and obtain all its fruits; for the vanquished, fatigued by the efforts they have made, will not be able to escape their pursuers.

It was by making a proper use of his reserve, that Napoleon won the victories of Marengo and Lutzen; it was by neglecting it, that the battle of Moskowa was not followed by disastrous consequences to the Russians.

In all positions, there is one point which, if it be taken, may cause the fall of all the others: this is the key of the position; and, in a country which presents natural advantages of ground, this point is usually the most commanding. It is on these points, promptly seized by the eye of the general, that the principal attacks of the assailing troops should be directed.

No fixed rule can be given as to the formation of an order of battle, as it depends on the nature of the country, the troops of which the army consists, and the system of warfare of the enemy opposed to it; but the following maxims should be observed:—

1st. That the centre and the wings should be so connected together, that the enemy would be unable to cut off any one of them and attack it separately.

2nd. That, in case of numerical or moral superiority, manœuvres can be attempted, which would otherwise be imprudent.

3rd. That the safest, though the most difficult, method of succeeding in an attack is to cause the first line, engaged with the enemy, to be well supported by the second line, and the latter by the reserve: also, to calculate when to make use of the cavalry and artillery, in supporting the decisive attack against the second line of the enemy.*

The principal aim of an attack being to force the enemy from his position, material force must generally be depended upon to effect this; but, sometimes, the chance of success, by making use of force alone, is so doubtful, that many generals attempt to turn the wing of the enemy nearest his line of retreat, which would determine him to make a retrograde movement for fear of being cut off.

When Napoleon first obtained intelligence of the intention of the allies to make a stand at Bautzen, he himself was at Dresden, and Marshal Ney, with 50,000 men, was at Torgau; concentrating his own forces upon Bautzen, he ordered Ney to advance by forced marches, so as to bear upon the right of the position occupied by the allies. Napoleon quitted Dresden upon the 18th May, 1813, arrived before Bautzen on the morning of the 19th, and employed that day in reconnoitering and making his dispositions for attack. On the 20th, the French effected a forced passage of the Spree; but, on the morning of the 21st, Ney having accomplished his flank movement on the right, Napoleon attacked the right wing in front, and the allies were forced to retreat.

The union of both systems of attack, that is to say, making use of material force on the front of a position, seconded by a turning manœuvre, will give a more decided victory than if they were both made use of separately: but all manœuvres for turning a wing must be so connected with the other attacks, that the enemy may not be able, by a spirited movement, to cut off the troops attempting it, thereby causing the defeat of the army. Thus, Frederic the Great won the battle of Prague, because the Austrians had left an interval of about one thousand yards between their right wing and the centre of the army. Lord Wellington likewise gained the battle of Salamanca, through Marmont's left wing endeavouring to cut off the British line of retreat upon Ciudad Rodrigo, thereby leaving an opening of half a league, which the English general made use of to defeat this wing while devoid of all support.

---

* Jomini, Précis de l'Art de la Guerre, vol. ii. chap. iv.

The direction to be followed by an army in its retreat is termed its line of retreat.

A retreat is the most difficult operation in warfare: for, when the physical and moral state of an army during a retreat (especially after a lost battle) and the disastrous consequences which the least disorder may bring on are considered, one can understand why the most experienced generals have so much repugnance against undertaking it.

Retreats are of different kinds, according to the motive which determines them.*

1st. A retreat is made voluntarily, before an engagement, to induce the enemy to advance upon a position less advantageous to it: it was thus Napoleon retreated, in 1805, from Wischau to Brunn, to bring the allies on the position he wanted; Wellington, also, gave an example of this, when falling back upon Waterloo from Quatre Bras.

2nd. When it is necessary to protect some point menaced by the enemy, either on the flanks, or on the line of retreat.

3rd. When, at a distance from its depots, in an unfertile country, an army may be obliged to fall back on the magazines.

4th. Finally, a retreat is made after a lost battle, or in consequence of an enterprize having failed; as that of Sir John Moore from Salamanca.

---

* Jomini, Art de la Guerre, vol. ii. chap. v.

The combinations of a retreat vary according to the nature of the country, the distances to be gone over, or the obstacles which the enemy may present. They are especially dangerous when made in an enemy's country, and, the further the point of departure is from the frontier and the base of operations, the more painful and difficult is the retreat.

Likewise the superiority or inferiority of the cavalry must be taken into consideration, and the spirit of the troops.

Thus, the retreat of the French from Moscow, without resources for provisions, without cavalry or draught horses, and the spirits of the troops annihilated, must have been very different from that of the Russians on to Moscow, when they were provided with everything, marching in their own country, and protected by an innumerable light cavalry.

In a retreat, the rear guard should be composed of the best troops in the army, and the strictest discipline should be preserved on the line of march.

The qualities which distinguish a general of a rear-guard are not common, more especially in the armies of Southern Europe:* yet Marshal Ney, in the campaign of Russia, 1812, afforded an example which, from the energy displayed, cannot be too much admired. For forty days and nights, he protected the retreat of the French army. "Every day, at five in the evening, he took up a position, and allowed his men to eat and repose themselves; at ten he again marched forwards. During the whole night, he drove on before him crowds of stragglers, by means of entreaties and blows. At daylight, towards seven o'clock, he halted, took up a position, and reposed his men until ten; then the enemy appeared again, and he had to engage them, gaining as much time and ground as he could, and this lasted until evening."† During these forty days, he had organized five rear-guards, each of which was destroyed; and, when he crossed to the other bank of the Niemen, he possessed but thirty men.

---

* Jomini, Art de la Guerre, vol. ii. chap. v.

† Ségur, Expéd. de Russie.

One of the most certain means of ensuring a retreat is to familiarize both officers and men with the idea, that, from whatever direction an enemy may come, they run no more risk by presenting to him the rear of the column, than the head; and to persuade them, that the maintenance of good order is the only means of saving troops pursued in a retrograde march. It is especially on such occasions, that the advantages of a strict discipline can be appreciated, which, at all times, is the best security for the maintenance of good order; but, to exact discipline, subsistence must be ensured.

In general, it is sufficient for the rear-guard to keep the enemy at a distance of a half-march from the main body; to expose itself at a greater distance might be both hazardous and useless; however, when it has a defile in rear of it, well protected, it may prolong its sphere of operations, and remain a whole march in rear of the army; for defiles facilitate a retreat when the army is master of them, as much as they render it difficult, when the enemy have taken possession of them.

When an army retreats, for any reason whatsoever, there must necessarily be a pursuit.

Even the best regulated retreat, executed by an intact army, gives an advantage to the pursuers: but it is especially after a defeat, and in distant countries, that a retreat becomes always the most thorny operation of warfare; and its difficulties increase in proportion to the activity which the enemy puts into his pursuit.

The boldness and activity of a pursuit will naturally be influenced by the character more or less enterprizing of the chiefs, and by the physical and moral state of the two armies; but it should always be remembered, that it is better to attack the flanks of the columns than the rear, and that, especially after a victory, the greatest ardour should be shewn in the pursuit, as, the army being then generally in a state of demoralization, it will be entirely destroyed.

Thus, at the battle of Roveredo, in 1796, Bonaparte having, by a well-combined attack, thrown the whole mass of the Austrians into the defile of Calliano, and put them to flight, his aide-de-camp Lamarois, at the head of fifty horsemen, galloped through the mass of fugitives, and, turning suddenly about, kept the head of the column in check, and thus gave time to the French cavalry to take several thousand prisoners.* At the battle of Waterloo, again, the vigorous pursuit of the Prussian cavalry annihilated the French army.

On the other hand, at the battles of Rolica and Vimiero, in 1808, Sir Arthur Wellesley was unable to follow up his success, for want of cavalry to pursue the vanquished enemy, who made their retreat in good order.†

The retreat of the British forces from Caubul, in 1841, presents a most important study. The want of discipline and energy on the part of the troops; the retreat being made during a hard winter, through a rugged and inimical country, where provisions could not be obtained; the boldness and activity of a harassing enemy; these were all the result of indecision and want of promptitude on the part of the commanders.‡

As several points in the preceding pages may appear obscure, we shall endeavour to make it more clear, by taking one particular action in all its points.

BATTLE OF NERESHEIM, 1796.

RETREAT OF THE ARCHDUKE CHARLES UPON THE RIGHT BANK OF THE DANUBE.§

The French army of the Rhine and Moselle, with the exception of twenty-two battalions and seventeen squadrons which formed its right wing, and were advancing by Bregentz towards the Iller, occupied, on the morning of the 10th of August, 1796, the following positions.

---

* Thiers' Révo. Fran., vol. viii.

† Wellington Despatches, vol. iv.

‡ Kaye's Affghanistan.

§ Prin. de Stratégie.

Duhesme's division of six battalions and eight squadrons, (5040 infantry and 590 cavalry,) was at Ober-Medlingen, in front of Gundelfingen; St. Cyr, with Taponnier's division of twelve battalions and eight squadrons, (9960 infantry and 596 cavalry,) between Neresheim, Umenheim, and Weiler-Merkingen; Désaix, with Beaupuy's division and the reserve, amounting to twenty-one battalions and thirty-eight squadrons, (17,430 infantry and 2930 cavalry,) in rear of Neresheim; Delmas' division of nine battalions and twelve squadrons, (7470 infantry and 890 cavalry,) near Bopfingen.

The Austrian army, with the exception of three battalions and four squadrons, which had been sent to the Vorarlberg under the orders of General Wolff, had four battalions and ten squadrons, (3560 infantry and 1500 cavalry,) commanded by Lieutenant-General Frelich, at Krummbach; two battalions and five squadrons, (1950 infantry and 900 cavalry,) under the orders of Colonel Giulay, at Günzburg; Condé's corps, composed of three battalions and a half, and nine squadrons, (about 5000 men,) was on its march to join Giulay; and Lieutenant-General Riese, with ten battalions and sixteen squadrons, (6960 infantry and 2480 cavalry,) was encamped near Hochstädt.

The centre, composed of twelve battalions and eighteen squadrons, (9500 infantry and 3480 cavalry,) under the command of General Hotze, formed a separate corps, of which four battalions and six squadrons occupied the heights of Amertingen on the left, three battalions and four squadrons those of Forheim on the right, four battalions and four squadrons were in reserve at Aufhausen, one battalion and four squadrons protected the heights between Aufhausen and Eglingen; and one battalion and a half, with two squadrons, held the advanced posts in front of Forheim, Weilenhof, Eglingen, and near the hunting lodge, where the road branches off to

Dischingen and towards the Danube. The right wing of the army, composed of nine battalions and thirteen squadrons, (6100 infantry and 1770 cavalry,) was encamped at Mädingen; and its advanced guard of two battalions and twenty-two squadrons, (1670 infantry and 3040 cavalry,) commanded by General Prince Liechtenstein, protected the approaches to Nördlingen.

The position of the French general, Moreau, was well chosen. He had concentrated his forces in a part of the mountains where his movements were not fettered by the difficulties which the nature of the country presented, and he commanded the high roads to Nördlingen and towards the Danube. There were no obstacles to prevent him from attacking either the wings or the centre of the enemy, whose troops, formed in small isolated corps, occupied the most difficult part of this agricultural and intersected country. The main body of the Austrian army had, in its rear, steep heights, furrowed with ravines but little practicable, which slope towards the road from Nördlingen to Mädingen, and prolong themselves as far as the Wernitz. Had its centre been driven back, this army must have made a painful retreat, and been separated from its wings. On the other hand, the French risked nothing, even had they failed in their attack, as they had it in their power to re-form, and await the consequences of such an event, upon the advantageous heights of Neresheim and Umenheim. The Austrians endeavoured to strengthen the position of their centre, by bringing their left wing behind the Kesselbach; but the right wing, which was posted at Forheim, presented its flank to the enemy, as soon as the latter advanced from Neresheim; and, although it was strengthened by deep ravines and thick woods, this precaution was not sufficient against the French, from their peculiar system of attack. It is true, that this wing might have been supported from the camp at Mädingen, in case of the enemy attacking it with superior numbers; but this support would have reached it too late, as Mädingen is at a greater distance from Forheim than Forheim is from Neresheim; besides, the troops could not well be withdrawn from Mädingen, as, in case of a defeat, they were intended to protect the retreat of part of the army which was to rally upon this position, whilst the main body filed off by the narrow valley of the Kessel. The left wing was, also, at too great a distance from the centre to support it, in case the enemy attacked it.

The Archduke had been betrayed into great rashness, when taking up so extensive and so dangerous a position. The removal of the magazines, which had been amassed upon the borders of the Danube, was not a sufficient reason for risking the loss of a battle. This prince felt deeply the consequences of his temerity, when he saw Moreau advance boldly towards the centre of the line; but, being aware of the danger of a retreat executed in presence of the enemy, he determined to attack the French army, and push it back, so as to be able to join Wartensleben without being further interrupted on the march. This was the only advantage he could obtain, for, in the mean time, Jourdan had advanced so rapidly, that the Archduke would have failed completely in his plan of re-union, had he pursued Moreau in the event of defeating him.

The despatches of Wartensleben, who did not cease to represent his inability to check the further progress of the enemy, and who urged the necessity of falling back upon Bohemia, led the Archduke to suspect that this retreat had already been begun, and that he should have to give up the idea of forming a junction between the two armies. In this case, a march upon the left bank of the Danube, as far as the bridges of Neuburg, or Ingoldstadt, seemed to him to be too hazardous; so he formed the resolution of crossing, as soon as possible, to the right bank, in order to dispute the passage with the army of the Sambre and Meuse, which might have approached it, or else to join General Wartensleben through Ingoldstadt and Ratisbon, if he had not yet abandoned the

Naab. These reasons determined the Archduke to direct his march upon Donauwerth, where all the preparations for a passage had already been made; but, before doing so, he considered it necessary to keep the enemy at a distance from the defiles of the Kessel and Wernitz, which were the only communications to this point.

The 11th of August was fixed upon, to begin the general attack, as, during the night of the 10th, part of the troops encamped at Mädingen were to reinforce the corps forming the centre. Nineteen and a half battalions and twenty-four squadrons, (13,500 infantry and 3900 cavalry,) assembled at Forheim and at Amertingen, were to bear down on the French centre, whilst General Mercandin, with some battalions which were to come from Hochstädt through Kloster-Mädingen, was to attack the post of Dischingen. General Prince Liechtenstein was ordered to support the attack of the centre, by making a demonstration upon Bopfingen with the advanced guard of the right wing, and more especially, by penetrating into the wood situated between Nördlingen and Neresheim. He was to effect this with 4000 infantry and 4300 cavalry, supported by four battalions and ten squadrons which had been left at the camp of Mädingen. The left wing, under the orders of General Riese, consisting of 6900 infantry and 2400 cavalry, was to advance through Dillingen and Giengen, march upon Oggenhausen, overthrow the right wing of the enemy, and push forwards, if possible, towards Heidenheim and Natheim, in order to turn their flank and rear. The army ready for action consisted, therefore, of 24,000 infantry and 10,600 cavalry.

Lieutenant-General Frelich was ordered to march upon Günzburg, cross the Danube, keep along the Brenz, through Stozingen and Giengen, and support the movements of General Riese. The Austrian troops marched on the evening of the 10th, in order to reach, during the night, the positions where the columns of attack were to be formed.

Moreau, faithful to his system of never adventuring himself in an unknown and intersected country, and always endeavouring to force the enemy to retreat by skirmishing with the advanced posts, began by attacking those of the Austrians, near Eglingen, on the afternoon of the 10th, with the advanced guard of his centre, supported by Taponnier's division; and forced them to fall back upon Amertingen and Aufhausen. Beaupuy's division, at the same time, penetrated into the wood between Schweindorf and Forheim, and Delmas made a false attack towards Bopfingen; but a storm, accompanied with very heavy rain, and which lasted until night, put an end to the engagement.

On the next day, the French had taken up the following positions: the right wing was at Dischingen, whence, profiting by the heights which are in front of a stream called the Eggebach, the centre occupied the table-land of Dunstelkingen. The left wing had advanced towards Schweindorf, leaving, on its flank, the forest which crosses the road from Nördlingen to Neresheim. Although the woods of that part of the country are so intersected by steep and deep ravines, that the left wing was completely sheltered from all surprize, yet Moreau took the precaution to place the cavalry, belonging to the reserve, opposite the debouch of the road to Nördlingen, where the country becomes open towards Umenheim and Neresheim. Delmas' and Duhesme's divisions remained in the same positions they had occupied the evening before.

The only palpable mistake made, in the distribution of the French forces, was the great distance between Duhesme's division and the centre: detached at Mädlingen towards the plain of the Danube, it could neither protect the flanks of the main corps, nor concur in an offensive operation; and, although it occupied an open country, it only possessed eight squadrons of cavalry. If all the infantry of this division had been placed in rear of Dischingen and fronting the Eggebach, it would have completely echeloned the right of the army, and Riese's corps would never have been able to reach the road to Heidenheim before it. A few detachments of cavalry were sufficient to watch the plain of the Danube, and Moreau's forces would have been more concentrated.

The advanced posts of both armies remained all the night of the 10th in the positions where they had been surprized by the storm.

The Austrian troops which had been ordered from Mädingen to attack the French centre, found the road through the forest so much broken up, that, instead of three hours, they took nine, and the artillery fourteen, to go over it. Through this, the Archduke lost the opportunity of surprizing the French; and, although this would have been an advantage, on account of their superiority both in numbers and position, he considered that it would be better to run the risk of an engagement, than to make a retreat which would have been most dangerous, or to take up a position in the valley, while the enemy possessed the heights.

11th August.—It was seven in the morning (and the advanced posts had been skirmishing since dawn of day) before the Austrians were ready to march upon the enemy. The following was the plan for attacking the French centre.—"The first column, of six battalions and six squadrons, will form at Amertingen: from thence it will march in two divisions, the first will reach the hunting-lodge at Eglingen by the wood on the left of Osterhofen, and the second will follow the road from Amertingen to Eglingen; uniting at that point, the column will immediately bear down to attack Dischingen. The second column, consisting of seven battalions and eight squadrons, will form at Aufhausen, where, separating into two divisions, they will take the road from Aufhausen to Eglingen, and that of Hofen to Dunstelkingen. This column, keeping up its communication with the first, will take possession of Dunstelkingen, and then march upon Neresheim, leaving a strong reserve at Katzenstein, to keep that position until

Dischingen is occupied by the first and Neresheim by the second column. The third column, of six-and-a-half battalions and ten squadrons, will form at Forheim, and march upon Umenheim, part through Kössingen and Höllenstein, part through Schweindorf."

As soon as the several columns had been formed according to these arrangements, they began the attack, and drove the French from the forest of Aufhausen, the villages of Hofen, Eglingen, Osterhofen, and the hunting-lodge, and, finally, from Reistingen and Trugenhofen. The enemy then retired to his principal position, and determined to defend himself vigorously. General St. Cyr, with eighteen battalions, occupied the heights of Dunstelkingen, whilst Generals La Courbe and La Roche, with their brigades, occupied Dischingen.

The first and second columns, having only eight battalions in order, after having driven the enemy from the woods and defiles round about, deployed in front of his position. The artillery opened its fire on both sides; but the Archduke, wishing to wait until the third column had gained ground on St. Cyr's flank, only directed a few weak attacks upon the village of Dunstelkingen: this column, however, kept back by the difficulties of the ground, as well as the spirited resistance of the French, had only made itself master of Kössingen; Schweindorf still held out, and the attack of the right wing, in the forest between Nördlingen and Umenheim, had no better success. The left wing of the Austrians alone obtained a decided victory, and found itself on the right flank and rear of the enemy. Lieut.-General Riese had driven Duhesme's division from Mädlingen, and afterwards from Giengen. Followed up without ceasing by the Austrian cavalry, the French general retired with difficulty through Bohmenkirch upon Weissenstein; Riese carried off two guns, penetrated as far as Oggenhausen, occupied Heidenheim, and pushed his light cavalry as far as Hausen and Gerstetten. All the French artillery, ammunition, waggons, treasury, park, &c., fled from

Heidenheim, and never stopped until they reached Aalen. During this time, General Frelich had crossed the Danube at Günsburg, advanced as far as Lauguenau, pushing his advanced guard as far as Albeck. Mercandin had reached the heights of Ballhausen, occupied Altenberg and Stauffen, and supported Riese on the flank itself of the enemy's army.

Moreau was in a critical situation, but his confidence in the strength of his position, and in the superiority of his concentrated divisions over the scattered battalions of the Austrians, reanimated his courage. Judging, with reason, that the enemy could not have occupied Heidenheim in any strength, he ordered one battalion and two squadrons to retake this important post; and the demonstration which the Austrians made on his left disturbed him so little, that he ordered General Delmas to march to Merkingen, leaving only a detachment at Bopfingen: he brought up his whole reserve, St. Cyr was reinforced, and ordered to maintain himself at Dunstelkingen to the last extremity. Désaix, with a support of fresh troops, debouched by Schweindorf, overthrew the Austrians' third column, and a second time took possession of the wood between Kössingen, Forheim, and Hofen. Finally, the Austrians, who had advanced from Nördlingen into the forest upon the road to Neresheim, gave way before the energetic movement of the French.

Such was the issue of this engagement, which ceased, on both sides, about two P.M.: on the part of the Austrians, from the impossibility of keeping it up; and on the part of the French, from the want of ammunition, which became irreparable on account of the flight of their park.

The corps forming the centre of both armies remained in presence of one another, and passed the night where they were at the end of the action. The right wing of the Austrians fell back to the camp of Mädingen, and the left wing to Dillingen.

On the 12th, early in the morning, the Archduke left the field of battle, with six battalions and eight squadrons, which he led to Mädingen, after having ordered General Hotze to fall back successively by the valley of the Kessel with the sixteen battalions and nineteen squadrons which still held the position they occupied the day before. Moreau remained where he was, without disturbing the retreat of the enemy.

On the 13th, the Archduke marched, with fifteen battalions and eighteen squadrons, through Harburg upon Donauwerth, where he crossed the Danube, and pitched his camp near Nordheim. Prince Liechtenstein, with three battalions and fifteen squadrons, covered the retreat, by taking up a position in front of Hasburg, which was occupied by eight battalions. Hotze followed the valley of the Kessel through Diemanstein, reached the bridge of Donauwerth, and rejoined the Archduke at Nordheim: his light troops, spread over the mountains, formed a chain of observation, which extended upon the left bank of the Kessel from its mouth at Eilingshofen as far as Deggingen, and communicated with Liechtenstein's advanced posts towards the Wernitz. Detachments scoured the country as far as Nördlingen and Ottingen.

The same day, Riese crossed the Danube at Dillingen, destroyed the bridge, and took up his position at Burgau. The Prince of Condé retreated from Mindelheim to Schwabmünchen, in consequence of a very serious affair which he had with the advance-guard of Ferino. Frelich fell back upon Fuessen. Finally, on the 14th, all the rear-guard of the army crossed to the right bank of the Danube, and only left an advance post at Donauwerth.

The engagement at Neresheim offers matter for a great deal of reflection. A general should engage with the enemy, and thus provoke a definitive termination to military operations, only when he is forced to it by circumstances, and when all his calculations attest the probability of a victory and the importance of its consequences. The Archduke had none of these cases for an excuse, when he formed the resolution of attacking the French army. He was desirous of securing his junction with General Wartensleben; but was he unable to effect this, except by an engagement, after that, on the 3rd, he had let pass a most favourable opportunity of defeating the enemy in detail? Demonstrations, secret movements, an advance of a few marches, finally, the sacrifice of a rear-guard in the difficult defiles of the Kessel and the Wernitz, were so many means which Moreau's inactivity had rendered infallible; and the Archduke would have gained valuable time, which his hazardous offensive operation lost to him, whilst Wartensleben's movement towards Bohemia required that he should use the greatest diligence in joining him.

It is true, that the passage of the Danube at Donauwerth, in presence of the enemy, and without having taken the precaution of keeping him at a distance, presented a great deal of difficulty and even real danger; but the position of the Archduke was not so desperate, nor his right flank so much exposed, as to require him absolutely to cross the Danube. A detachment patrolled the country along the whole length of the Altmühl, without having perceived the enemy; Nauendorf, with a corps of observation, had occupied Altdorf on the 9th, and Neumarkt on the 10th; General Kerpen, with four battalions which had arrived from Austria, and five squadrons detached from the army, protected the fortress and bridge of Ingoldstadt. There was, therefore, no sufficient reason for hurrying the passage of the Danube; as, the Archduke being certain of Jourdan's not cutting him off, nothing prevented him from crossing the river at Neuburg or at Ingoldstadt, in case it became impossible for him to join Wartensleben.

The offensive movement upon Neresheim had not even the appearance of success. The adversary, superior in numbers, with his troops concentrated and well posted, risked nothing. The intention of the Archduke was to destroy all the projects which the French generals might have made; he wished to prevent Moreau from crossing the Danube below the Brenz, from reaching the Wernitz by the defile of the Kessel, or from bringing his left wing near the army of the Sambre and Meuse. According to these several hypotheses, he spread his army upon all the roads which the enemy could take to execute either of these three enterprizes, without considering that, one alone becoming the most important, and the two others being only accessory, it was requisite to distinguish the essential operation and to act accordingly. Nothing could be so dangerous for the Austrians, as the junction of the two French armies; that was, therefore, the object which should have fixed all the Archduke's attention, and thenceforth his right wing became the most important point; he should have concentrated his army upon it, and only feebly occupied all the country as far as the Danube. It is not likely that Moreau would then have marched between that river and a concentrated army; if, however, depending on his numerical superiority, he had attempted the enterprize behind the range of mountains which separate the Brenz and the Wernitz, and if, giving up his plan of forming a junction with Jourdan and crossing the Danube, he had carried on his operations upon the left bank of that river, it was still easy for the Archduke to reach either Donauwerth or Neuburg by a forced march.

It results from the preceding, that the position occupied by the Austrians, and the stay they made there until the very moment when Moreau threatened to break through their centre, shewed a want of calculation, which could only lead to a battle given under the most fatal auspices.

The formation for the attack was no less faulty: for, although the great extent of country, from Nördlingen to Dillingen, which was occupied by the Austrians, required their being scattered in several small and feeble columns, the Archduke, after having formed the resolution of attacking the French, might, on the 10th, have taken precautions to remedy the inconveniences arising from too extended a line

The main body of the French army, consisting of thirty-three battalions and forty-six squadrons, was, on that day, in the neighbourhood of Neresheim: on the 11th, it was between Dischingen and Schweindorf; the left wing extended as far as the road to Nördlingen.

If, therefore, the Archduke had left only cavalry at Kloster-Mädingen and at Dillingen, and that, on the day of the battle, he had taken away all the infantry from these places to reinforce the centre between Amertingen and Ederheim, he would have been able to have attacked the salient angle of the French position with a force proportional to the extent of his enterprize: instead of which, he attacked the enemy with a great number of isolated columns, each too weak to fulfil its object, unable to concert together their order of retreat, and too distant from one another to afford a reciprocal support in the event of one of them being overwhelmed by superior numbers.

The Prince had hoped to surprize the French by an unexpected attack at dawn of day, and depended a great deal on the manœuvre of his left wing, with which he had intended to turn the right flank of the enemy; but a storm delayed the first, and the second remained without effect through the cool intrepidity of Moreau: all formations, however, are faulty, when they depend on the coincidence of uncertain measures, and when, by themselves, they do not unite sufficient means to ward off the influence of unforeseen circumstances.

On the day of the battle, Moreau acted as a wise as well as a bold general; the loss of Heidenheim, the defeat of his right wing, the demonstrations upon his left towards Bopfingen, nothing troubled him even for an instant; and he remained firm in the position he had so well chosen. The only reproach which can be made on him, was, that he did not follow up his success, when he had driven the Austrians out of the wood of Schweindorf, and had found out their inability to continue the engagement. If he had then left a division and the reserve at Dischingen and Dunstelkingen, and had pushed forwards with the three other divisions between Schweindorf and Forheim, he would have broken the Austrian line, cut off the corps which were between Bopfingen and Neresheim, defeated the centre, and forced the remainder to retire into the valley of the Kessel and towards the Danube.

But, if this general lost the opportunity of gaining a complete victory on the 11th, and of destroying the Austrians on the 12th, when they had the boldness to leave the field of battle in open day and in his presence, it is clear that the flight of his park of artillery to Heidenheim, and the fear of not being able to make up for the consumption of the ammunition, was alone the cause. It is, however, to be observed, that this fear would not have prevented a more enterprizing general from profiting by his adversary's mistakes, and, at least, doing him as much harm as possible during his retreat. In such a case, the army should have given up their ammunition to the troops ordered to pursue the enemy.

CHAPTER VIII.

ON MOUNTAIN WARFARE.

When a mountainous country is to be occupied and defended the following principles should be observed:—1st, always to keep in view the strategical points; 2nd, to concentrate all the means of defence on those positions which protect the keys of these points; 3rd, never to detach men in small numbers (unless their being detached is immediately connected with the main object), for, by disseminating the troops in every direction, and by sacrificing them in petty and often useless engagements, no beneficial result is ever obtained.

It is generally supposed that, to maintain possession of a mountainous country, it is necessary to defend all the entrances and every position, and that armies acting in such countries, should always occupy all the heights.

To keep and defend every entrance, valley, pass, and, in fact, every position, in a mountainous country, are precautions which become useless, from the consequent dissemination of the troops; and to desire that an army should occupy the highest points of the mountains, is to forget the difficulty of the means of transport over impracticable paths, and the impossibility of provisioning, for any length of time, the troops thus posted. Such precautions must be restricted to those portions of the country which it is necessary to hold in possession for the due carrying out of the operations, particularly for the communications of the army. But they should be occupied by sufficient bodies of troops, well supported, and capable of maintaining themselves. Not only should not an enemy be able to approach, but not a cat or a dog, except under the fire of those occupying the hills.*

The positions occupied by the Duke of Wellington's army, during Soult's operations to relieve Pampeluna, in July 1813, will perhaps better illustrate this. The theatre of operations was a trapezoid, with sides from forty to sixty miles in length, and having Bayonne, St. Jean Pied de Port, St. Sebastian, and Pampeluna, all fortresses in possession of the French, at the angles. Diagonally across the quadrilateral, ran the great spinal ridge of the Pyrenees. From this chain of mountains, huge branches spread out on either hand, and the communications between the valleys thus formed, on both sides of the main chain, passed over certain comparatively low elevations. On the French side were the Bastan, the Val Carlos, and the Val de Baygorry, the upper part of which is divided into the Alduides and the Val de Ayra. On the Spanish side were the valleys of Ahescoa or Orbaiceta, the valley of Iscua or Roncesvalles, that of Urros, the Val de Zubiri, and the valley of Lanz; the two latter leading down directly upon Pampeluna. The Anglo-Spaniards were, at this time, laying siege to St. Sebastian and blockading Pampeluna, which were then considered as forming the chief strategical points. Soult, desirous of relieving them, forced the main body of the English army to act on the defensive, in order to protect these operations; which it did, taking up the following positions, by which the mountain passes, which were the keys of the strategical points, were defended, and each division of the army was of sufficient strength to act on the defensive, if attacked, until it could be supported. Byng's brigade of British infantry, detached from the second division, and reinforced by Morillo's Spaniards, was on the extreme right, at the rocks in front of the passes of Roncesvalles and Ibaneta, which lead to the Val Carlos. To the left of Byng, Campbell's brigade, detached from Hamilton's Portuguese division, was posted in the Alduides, and supported by General Cole, who was with the fourth division at Viscayret, in the valley of Urroz.

---

* Memorandum of the Duke of Wellington on Sir William Macnaghten's Letter of Oct. 26th, 1841.—*Kaye's Affghanistan.*

On the left of Campbell, General Hill defended the Bastan with the remainder of the second division and Hamilton's Portuguese. Picton, with the third division, was at Olague, as a reserve to those troops and to Cole.

On the left of Hill, the seventh and light divisions occupied a chain of mountains running by Echallar to Vera; and, behind them, at the town of St. Estevan, was posted the sixth division.

Longa's Spaniards continued the line of defence from Vera to General Giron's position, which, extending along the mountains bordering the Bidassoa to the sea, crossed the great road to Irun. Behind Giron was the army of Sir Thomas Graham, besieging St. Sebastian. The Conde de la Bispal blockaded Pampeluna.

Thirty-six pieces of artillery, and some regiments of cavalry, were with the right wing and centre; but the bulk of the cavalry and the heavy artillery were behind the mountains, chiefly about Tafalla. The great hospitals were at Vittoria; the commissariat depots principally along the coast; and to supply the troops in the mountains was exceedingly difficult and onerous.*

The Duke was fully aware of the impossibility of defending a long line of frontier, with seventy mountain passes, the communications to which were on the side of the enemy. He therefore restricted his attention to fortifying some of these passes;† but, even then, the position he was obliged to take up had very tedious and difficult communications, whilst those of the enemy in front of the passes were easy and short; and in case of attack, the front line of the British could not support each other, and could look for support only from their rear.*

---

* Napier's Peninsular War, vol. vi.

† Wellington Despatches, vol. x., p. 568.

Before entering into the details of the principles upon which mountain warfare should be based, principles which, though not new, are often misunderstood, it is necessary, 1st., to give some idea of the general nature of mountainous countries, so as to enable one to judge which is the most advantageous direction to be given to the general operations; 2nd., to explain how one should proceed to examine, in detail, particular districts and local objects, so as to regulate the petty operations.

A great chain of mountains is one of the best defences of a country. It is usually in the sinking of the highest points, that rivers and streams take their rise, along the banks of which the most practicable roads are generally found; although sometimes the torrents open passages for themselves across rocks, the sides of which are so scarped that one cannot penetrate to them.

The reconnoissance of a country of this kind should begin at the most elevated part, from whence the waters, as well as the ravines, take their rise, the origin of which should be indicated. One should then follow, as far as possible, the course of these rivers, streams, and principal ravines, specifying their number and extent. The nature and direction of the heights which cross, surround, or cover the country, should be observed, as well as their relative elevation; the several offshoots which defend or lay open their debouches, and their connexion with these latter, should also be noted.

In the reconnoissance of the mountains themselves, the first object should be to obtain an idea of their extent and of the connexion of their several chains, as well as the facility or difficulty which their inclination or acclivity may present to the movements of the troops. Finally, we should have positive information as to the points to be occupied; the communications to be kept open or destroyed, or only to be closed by means of redoubts or *abattis;* and whether these latter are to be according to a given plan, or simply as a temporary security to the front, rear, or flanks, of a position to be occupied.

---

* Wellington Despatches, vol. x., p. 578.

In the descriptive account which is added to the sketch of the country, the nature of the roads should be specified; whether fit for waggons, artillery, horses, mules, or only for infantry. This should be indicated with precision, as well as the time of the year in which they are practicable. The more difficult and narrow parts of defiles and their escarpments should be described; observations should also be added relative to the rivers, streams, torrents, and ravines, which it would be necessary to cross, and which vary after every rain or melting of snow; the means which appear the most practicable for overcoming these obstacles should likewise be pointed out.

In lofty mountain ranges, such as the Alps, Pyrenees, and Carpathians, roads are scarce, because the valleys alone are inhabited: if, therefore, correct information can be obtained respecting the valleys, their approaches, and debouches, it will not be necessary to make use of any other communications than those afforded by the roads and beaten paths.

When examining in detail a mountainous country, the first points to be considered are those mountains which overlook others, their relative position, the means of reaching their summits, and the most important points to be occupied, either generally or otherwise; whether the summits consist of naked rocks; whether they are wooded, either partly or totally; whether they are advantageous positions to occupy; and what object would be fulfilled by doing so.

The passes, roads, and paths, which cross the heights, should be examined, as well as the back of the heights, and the valleys; whether the valleys are practicable or not, or only difficult of access; whether artillery, cavalry, or only infantry, can pass through them. The debouches and the defiles which lead into these valleys should also be carefully sought out, and it should be ascertained whether these debouches or defiles are favourable or otherwise.

The nature of the steeps and slopes of the mountains should be reconnoitered, as also the character of the woods (if there are any), of the streams, pastures, towns, boroughs, villages, hamlets, country houses, farms, windmills, and isolated houses; whether they would be of any use in a military point of view; what positions would be advantageous for encamping, &c.

Examine whether there is any table land beyond, which would enable an enemy, by taking up his position there, to advance and make himself master of a large extent of country; examine accurately the points by which the enemy might turn the positions or outposts which it is intended to occupy, or by which he might himself be turned; discover whether there are any paths which enable this to be done; for, though mountainous countries present strong positions in almost every direction, yet the greater part are susceptible of being turned.

It should be discovered whether heights of middling elevation are practicable, or would be useful if occupied; whether batteries, or posts of observation, might be placed there; the nature of their communications with their rear; whether they are short and easy; whether, once the enemy has got a footing in the mountains, he can cut off your communications; what means there are to secure these, and at what time of the year the several mountain passes are closed up by snow.

The local objects which are met with in a mountainous country, and which should be most minutely surveyed, are the following:—Roads, Defiles, Rivers, Ravines, Valleys, Boroughs, Villages, Hamlets, Isolated Houses, Forts.

Roads.—There are few mountain ranges that do not possess some track throughout their whole length, which, although it may be but little frequented, will yet be found exceedingly useful. In mountainous countries, the roads are usually hollow and narrow, and, in consequence, but little fit for artillery. These roads are generally divided into three classes; roads practicable for carriages, those for beasts of burden, and those which are only fit for infantry.

Mountain roads are often obstructed by snow; it is therefore of importance to know at what season they are closed or open; they may be more or less open at different parts, and sometimes are so steep that they are crossed with difficulty.

In countries of elevated plains, the roads are almost always hollow at the approach of a village or town; and, when two rivers or two valleys, distant several miles from each other, run parallel, the country between these rivers or valleys usually consists of a mountain with slopes furrowed in cavities and hollow paths, but with a crest practicable throughout its length, presenting a far more convenient path than will be found on the sides.

High roads flanked by rocks are sometimes barred by masonry works, termed *cloisons;* but such barriers can only present a temporary check to the march of the enemy's columns or that of his carriages: these barriers seldom extend beyond the narrow bounds of the passage which they shut up, and are neither a protection against the danger of being turned, nor against the enemy's fire from the neighbouring heights.

On the 14th August, 1799, Loison, with three battalions and a Swiss detachment, after having crossed the Steinerberg and the glaciers of Susten, in the Mayenthal, was making for Wasen. As far as the debouch of the valley of Mayen, he had no obstacles to overcome, except those presented by the localities; but there he was checked by an old redoubt, which had been put into repair, and was defended by 400 men and two guns. During the night, a few companies reached some heights overlooking this fort, to incommode the garrison; and, the next day, Loison, protected by the fire of these companies, stormed the fort, and captured the guns with the greater part of the garrison.*

To render such works capable of a long resistance, they should be case-mated, and closed up in rear as well as in front; they are then sheltered from the fire and stones which might be poured upon them from the heights that overlook them, and their garrisons are no longer in fear of being turned: for, being furnished with provisions and ammunition, they can the more efficaciously counteract the operations of the enemy, either by delaying the march of his columns, or by interrupting his communications. The Austrians have erected some fine works of this description, on the high roads which cross their mountain ranges.

Simple paths can, sometimes, with a little labour, be converted into good roads; they are usually supposed to be impracticable for troops, by the people of the country, on account of the ditches and other obstacles which make them narrow.

Hollow roads, which cannot be filled up, should be made use of as seldom as possible; for, if a carriage breaks down or gets imbedded in the mud, the remainder of the column is delayed.

Defiles.—These are numerous in countries where the mountains are lofty; they are more or less narrow, of greater or less extent, and more or less frequented. To be able to calculate the number of men or horses which the front of a column entering a defile should consist of, and the time necessary to get through it, it is necessary to be well acquainted with its length and breadth throughout.

It should be examined, whether the direction is straight or turning; whether, at the entrance or at the debouch, ground can be found advantageous for engaging an imaginary body of men; whether batteries or posts, capable of covering and protecting a retreat, could be established there; and whether there are any neighbouring positions which it would be advantageous to occupy; whether there are any passes which should be taken possession of, either to debouch on to the enemy, or to keep him in check; which of these is the best for artillery, carriages, or other transports; for cavalry, or infantry; whether the communications to the flanks or rear are direct or indirect; what time is required to reach the height, either by roads established or to be established; and, finally, whether it is possible to open any new passage.

---

* Jomini, Histoire critique et militaire des Guerres de la Révolution. B. xv., chap. xc.

Rivers.—Rivers which take their rise in mountains are rapid, and of little depth near their source; their banks are generally edged with heights, prolongations of the one in which the river has its source. These rivers swell with great rapidity, either after much rain or from the melting of the snow: the latter usually causes two increases in the year, the first in March or April, when the snow first begins to melt, and the second towards the month of July, when that on the highest summits begins to be affected by the great heats. It is important to be correctly informed as to the time of year when these increases take place, so as to regulate the movements of the troops accordingly.

The beds of these rivers are generally good; but the quantity of large stones, with which the fords are encumbered, makes them very inconvenient for horses, and often impracticable for artillery or carriages.

Ravines.—In mountainous countries, ravines sometimes become torrents, which vary according to every fall of rain; it should be inquired whether these beds are ever dry, and at what periods. If the torrents cannot be sounded, the people of the country will be able to tell the breadth and depth of the water, and whether cavalry can cross them without fear of imbedding themselves or being carried away.

Ravines which may appear inconsiderable at their source, often become precipices. Those which have their borders on a level with the ground, are usually the most dangerous when unknown; but they make excellent supports.

Some ravines have easy debouches, and slope gently towards the bottom, which is usually dry in summer.

As this description of ravines might be used as a road by a column, it is important to know at what point they finish, as well as the labour which would be necessary to make them practicable for cavalry, or even for infantry, whether throughout their whole length, or only in part of it; they should, besides, be thoroughly reconnoitered throughout, more especially when they lead to the banks of a river or stream. Prudence requires that the debouches of such ravines should be defended by detachments.

In general, it is essential to examine attentively the banks and bottom of a ravine, as to the nature of the ground: whether it consists of rocks, clay, rolling stones, sand, or gravel; whether the ravines are broad, deep, sloping, or steep; whether the steep parts can be sloped, to make the passage of the troops more easy.

Valleys require a very careful survey. The chief points to be inquired into are, the population, extent, woods, cultivation, intersection by rivers, streams, or ravines; whether they produce grain or forage; whether troops can march through them easily and with safety; whether the mountains or heights, which form these valleys, are at such a distance that the columns advancing through them would not be inconvenienced by the fire of the enemy posted on their heights; and, especially, whether this enemy could shut up the troops which had so advanced.

Valleys which are cut longitudinally or transversely by a great number of counterforts, streams, sinuosities, and ravines, are often impracticable for troops, from the number of bridges to be constructed or passages to be opened.

Boroughs, villages, hamlets, and isolated houses, situated at the foot of heights or in hollows, are seldom capable of being turned into posts: but when circumstances require that they should be occupied, it is necessary to remedy whatever defects they possess, by means of intrenchments.

Intrenchments have this advantage, that the effect which they produce is at the same time both moral and physical; they check the ardour of the enemy, and protect the troops which defend them: but, if badly placed or constructed, or badly defended, they lose all their value.

A feeble defence is but too common; and proceeds from infantry being only taught to make use of their weapon at a distance; from their being instructed to place confidence in its fire alone, and not in the bayonet; in fact, from their not being exercised to close combat.

From this it results that, if the enemy is not driven back at the first fire, the men within the work, seeing that the only means of defence with which they are acquainted takes no effect, get discouraged, and the work is carried at the very moment when the assailants, in their endeavours to cross the ditch and escalade the parapet, become disordered and cannot make use of their weapons, whilst every advantage is on the side of the defenders. This was remarkably exemplified at the battle of the Nivelle, where the French, although they had been working on their defences for six weeks, and were equal in number to the assailants, were in twenty minutes driven out of their forts.* But an intrepid commander, who, when the enemy leaps into the ditch, will make his men mount on the parapet and receive them at the point of the bayonet, will not fear the escalade of a well-constructed field-work.

Forts constructed upon mountains and rocks, are sometimes so elevated that the approach of the enemy is scarcely affected, on account of the very depressed angle at which it is necessary to fire the guns.

---

* Napier's Peninsular War, vol. vi.

Such posts are often unprovided with water, especially when they depend for a supply upon wells which dry up in summer; this reduces the garrison to the water in the tanks, which soon becomes bad, and forces it to capitulate.

Having indicated how the several parts and objects of a mountainous country should be examined in a military point of view, we shall proceed to explain the principles according to which every officer should be guided in mountain warfare.

The choice of officers to whom the command of the several detached corps is to be intrusted, is nowhere of such importance as in this kind of warfare, because on them very often depends the success of the greatest enterprizes, whilst the natural obstacles of the ground prevent the Commander-in-Chief from perceiving or remedying the errors which they may commit. It is especially in mountainous countries that the exploits of individual officers shine forth; it is there that they find a thousand occasions for distinguishing themselves, as much by proofs of intrepidity as by a bold bearing in critical situations.

The most favourable time of year for beginning military operations in a mountainous country, is when the cold is not sufficiently intense to delay the movements of the aggressor, whilst it is still severely felt by those who are obliged to hold to the heights according to strictly defensive principles, and find themselves under a necessity of keeping to their post, without shelter, without fuel, and without any relief from their fatigues. It is in the month of March that the snow, while still hard, makes the access to the heights more easy, covers the fields, and fills up the ravines to such a height that they can be passed by platoons; whilst, in summer, there is often great difficulty in crossing them by single files.

Conformably to the rules of mountain warfare, the heights should be mastered before penetrating into the valleys; but the truth of this principle depends on the supposition that the enemy is in possession of these heights, and that the valleys into which it is intended to penetrate, are commanded by them.

According to the theory of tactics, when it is required to execute a movement on the field of battle, the advantage of being able to direct an attack from commanding ground is too great to be neglected; but it would be an error to apply this principle in all its strictness to mountain warfare, or to fancy that, in mastering the water-courses, command of all the communications has been obtained.

We should find the result very different, if, when acting in a mountainous country, we gained ground on the heights, and carried the operations beyond, with the intention of taking possession of a whole valley. In this case, the attack should be made from the plain, because greater means can then be made use of; whilst those of the adversary, who is on the defensive, diminish, and, as he is driven back, he loses more and more the power of acting on the offensive.

We shall here fix as a principle, that both systems should be made use of simultaneously; that is to say, 1st, the troops in the plain should be directed on to the valleys; 2nd, no decision should be come to as to the choice of positions to be occupied, or the directions to be given to the movements, until accurate information has been obtained of the outline of the mountains, as well as the situation and nature of the principal valleys into which it is intended to penetrate.

In lofty mountain ranges, where an advance cannot be made except by following the directions of the valleys, and where the difficulty of obtaining provisions impedes any rapid movements, the influence of a manœuvre does not extend so far as in open countries. This circumstance alone, which depends on the nature of the locality, is an undeniable proof of the principle, that the possession of the plains will give that of the mountains, where every step becomes the price of a new enterprize, and where the numerous variations in the configuration of the ground require that the movements should be adapted to the nature of the localities.

An officer entrusted with the direction of such operations, should conform his movements to the irregularities of the ground, and especially avoid the danger of a hazardous position, or of a false movement; for the nature of the country is opposed to any rapid manœuvre by which a serious mistake might be rectified.

In an open country, the movements of an adversary can be discovered from a distance; and even if the object of these movements cannot be penetrated, there is, at least, the time and the means for being prepared against any events. If this adversary undertakes too bold a stroke, he is punished for his temerity by the use made of the chances which he presents against himself.

These considerations evince the great superiority of attack over defence, especially in mountainous countries; and illustrate the necessity of going back, whether for the purpose of studying the art of war or of putting that art into practice, to fundamental rules, in order to seize the true principles of that science, and thereby avoid an erroneous application of it to such or such a movement, which, although imprudent on a plain, becomes no longer so in hilly districts.

The offensive produces, also, on the mind of the soldier, a moral effect of an advantageous character; he has, besides, the resources of the art in his favour: in fact, the aggressor forms his plan, determines his movements, unites his forces upon some known point, and gains a superiority which an attack from the enemy could not counterbalance, except by paralyzing his resources and delaying his several movements. But, to obtain this object, he who keeps on the defensive should avoid all useless engagements; he should never offer resistance, except when advantageously posted; he should adapt the use of his weapons to the nature of the ground:

and, finally, seize without hesitation the first favourable moment for taking the offensive.*

In general, the only positions which can be defended with any prospect of success, are those which enable the defenders to counteract every enterprize of their assailants; that is to say, they should be sheltered from every surprize, from every masked attack, from every unexpected manœuvre, &c.: but these qualifications are seldom found united in mountainous countries. However, as the general plan of the operations may sometimes require a second line to be secured (whether to close the entrance or the debouch of a lateral valley, or to check for some time the movements of the enemy), by occupying positions which, in the long run, would not be able to resist any combined efforts, it is at least necessary that positions occupied for this purpose should by no possibility be turned by superior force, nor be exposed to a cross fire, for either of these contingencies would require their immediate evacuation; neither should the ground be such as to allow of means being made use of for attack, disproportionate to those for defence. The advance posts, placed at convenient distances, should be so situated as to be able to ward off all surprize, and even keep the enemy in check, until the officer commanding the main body has taken means to counteract his projects.

Every approach to the position should be commanded by the artillery. The reserves should be sufficiently close to the points of attack, to be able to reach and support them at the decisive moment, and yet at such a distance, that they should not suffer from the first fire, or be driven back with the first line. Finally, the line of retreat should be secured; and, if of necessity it lead through a defile, this should be occupied beforehand, otherwise the loss of the position would be followed by the total defeat of the whole detachment.

---

* Jomini, Précis de l'Art de la Guerre, part i., chap. iii., p. 29. General Clausewitz, whilst endeavouring to support the contrary opinion, admits that a general, by always keeping on the defensive, must, sooner or later, be overcome.

To elucidate fully the system which should be adopted, not only as to the choice of positions in mountainous countries, but, also, as to the means to be made use of for mastering them, we shall endeavour to analyze the several systems which have been put into practice up to the present day. These several systems are reduced to the following :—

1st, to occupy all the valleys; 2nd, to take up a position which would bar the principal valley in its breadth; 3rd, to take up a position throughout the length of the principal valley; 4th, to occupy, at the same time, the valleys and the mountains; 5th, to occupy the mountains and observe the valleys; 6th, to take up a position at the point of concentration of several separate lines, and post small detachments of observation in the valleys, passes, and paths, situated on the front, flanks, and rear of the position.

1st.—The occupation of all the valleys, and the disadvantages which it presents.

The high mountain ranges, as has been already stated, are crossed by valleys which take their rise from the highest point, and which, from the point where they branch off, have scarcely any other communications than paths across the steep slopes that border them; the lines of operations and communications follow these valleys, and, like them, meet together in the same direction. It follows from this, that several roads may lead to the same point, and that the commander who wishes to act on the offensive from the plain on to the mountains, can choose his line of attack, and unite his forces upon the debouch which he considers to be the most advantageous for his designs. On the other hand, he that is upon the defensive will, in all likelihood, first disseminate his forces in consequence of not knowing in which valley the enemy will make his appearance, and then find himself unable to reach the one towards which the enemy is advancing, without falling back to the common point of junction, or, at least, making a considerable circuit; for, to occupy all the valleys to advantage, it would be necessary that each of them should be defended by a number of men sufficient to ward off any attack, without requiring to be supported by those posted in neighbouring valleys, and who would be unable to reach them in time.

But, to carry out this system throughout the whole extent of a mountainous country, it is evident that a vast number of men would be required; and then the question presents itself, how are these troops to subsist? for it is not sufficient, in these sterile positions, to calculate the number of rations according to the number of fighting men; we must also take into account the subsistence of the men and animals employed in conveying these provisions, and who often consume the greater part of their convoys before reaching their destination. Besides, even supposing the magazines could make up for the want of resources of the country, there would always remain the impossibility of finding positions capable of checking the enemy; for this reason, that there is no position which he is obliged to attack in preference to another, as there are always several roads leading to the same point; no position, therefore, is sufficiently strong of itself, or sufficiently secure on its flanks. Isolated by the nature of the country, they are all exposed to be turned, and the enemy could often leave them in his rear without compromising his communications, as such ground is not favourable for rapid or vigorous enterprizes.

2nd.—Positions taken up across the breadth of a valley, and their defects.

Every position taken up across the breadth of a valley, has the following defects: 1st. Its wings are commanded by the heights at each extremity of the position; 2nd. Its line would often be divided by the waters which generally flow at the bottom of the valley, so that an attack made with superior forces, and directed either through the mountains upon the wings, or upon one or other part of the centre, which is divided by the course of the water, would be successful; besides, the defeat would be the more complete, as the remainder of the corps, acting on the defensive, would either be attacked in flank and rear, or have their effect neutralized.

We have already seen, at the commencement of this chapter, the positions occupied by the Anglo-Spaniards, in the Pyrenees, in the month of July, 1814.

On the 24th, Soult collected the right and left wings of his army, with one division of the centre and two divisions of cavalry at St. Jean Pied de Port; and, on the 25th, he attacked, with between 30,000 and 40,000 men, General Byng's post at Roncesvalles. Lieutenant-General Sir Lowry Cole moved up to Byng's support with the fourth division, and these officers were enabled to maintain their post throughout the day; but the enemy turned it in the afternoon, and Cole considered it to be necessary to withdraw during the night; he therefore marched to the neighbourhood of Zubiri.

Early on the 27th, Sir Lowry Cole and Sir Thomas Picton, considering their post at Zubiri as untenable, retired and took up a position covering the blockade of Pampeluna, with their right extending beyond the village of Huarte. Cole himself occupied a hill commanding the road to Huarte, about a mile in advance of the position.

Soult, who had been following up in pursuit, was arrested in his progress. To advance by the Huarte road was impossible, and he was unable to stand still, because his army, contracted to a span in front, was divided in its whole length by the river Guy, and compressed on each side by the mountains, which, in that part, narrowed the valley to a quarter of a mile.

The consequence of this movement through the narrow valley of Zubiri was, that Soult was obliged to extend his forces to the right and left of his position, and, after a series of determined actions, was forced to retreat.*

---

* Wellington Despatches, vol. x. Napier's Peninsular War, vol. vi.

3rd.—Positions occupying the length of a valley, with their advantages and disadvantages.

A position taken up in the length of a valley, has the following advantages :—1st. It has the front protected by the streams which flow before it; 2nd. Its wings are supported, on one side, by the gradual elevation of the ground, and, on the other, by well-defended defiles, or by lakes which receive the water from the lateral valleys.

It is difficult to break through such a position; for the points by which the enemy would debouch from the opposite mountains, are marked out by the nature of the ground, and allow of no extension, whilst the defence is easy for him who occupies the valley, as he has more liberty in his movements. And even in the case of an assailant attempting an attack by a lateral valley, this attack would not be followed by the possession of the principal valley; because the occupant, to whom other lateral valleys present as many lines of retreat, being able to unite and deploy his troops, possesses a decided advantage over an adversary debouching through a narrow defile, which he does not even dare to leave at any distance for fear of being cut off.

But, to occupy such a position, it is necessary that every pass leading to it should be carefully guarded. There is, however, a superstition connected with the system of *cordons*, which instils the idea that all outposts, whether strong or weak, extended along a line, of whatever extent it be, and whether in secure or hazardous positions, will be at once turned, out-flanked, and forced to retire, as soon as the enemy breaks through a single point; and that all ground for confidence must necessarily fail until a new line is established, parallel to the first. It is especially in mountainous countries, more than in any other, that the fear of being turned disturbs the soldier. Not being able to seize at a glance the complications of the reciprocal movements, his judgment becomes as limited as his sight, and he feels dispirited because he is unacquainted with the nature of the ground. Yet it is precisely in the mountains that the danger of being turned is less to be feared than anywhere else; because there it can only be attempted by small columns or isolated detachments, along paths for the most part next to impracticable, and which, consequently, may be kept in check by a small number of men. It was from this feeling that Generals Cole and Picton had abandoned the position of Zubiri. It was impossible to turn that position by the valley of Urroz, as that line was too rugged for the march of an army. The only roads were by Erro and Linzoain, lying close together, and both leading upon the village of Zubiri over the ridges which Picton occupied with 20,000 men; and this was a position of such strength, that Soult had declined attacking it on the evening of the 26th, when Cole alone was opposed to him. This retreat nearly caused the ultimate ruin of the campaign.*

But, in warfare, the moral effect of a manœuvre will always more or less influence an opponent. Whilst, therefore, decisive movements with superior forces are made in another direction, the most certain way of cutting off a position taken up in the length of a valley, is to turn it. If circumstances will allow of its being done, this should be attempted in the valley itself, by bearing down upon the debouch, and by penetrating into it with superior forces.

To facilitate this operation, the aim should be to paralyze the power of the enemy's resistance, by attacking at the same time his flanks and rear with small columns, which should be directed through the lateral valleys; and, to obviate unnecessary risk, the march of these several small columns should be made to depend upon that of the main body; they should be within its reach, and follow it in formations by echelon.

If the attempt is opposed by natural obstacles, they should endeavour to reach the height from whence the valley takes its rise; for it is almost a certainty that this will only be defended by feeble detachments, as it is impossible to provision, for any length of time, strong corps in these isolated stations; and, besides, the difficulty of the communications will not enable those on the defensive to take any efficacious measure against movements which they can have no knowledge of. Thus the aggressive party, having reached the heights of the mountains with superior numbers, can overwhelm his enemy posted at their foot; or, as all the valleys take their rise from the same height, and as they are sufficiently near to one another, the aggressor, having reached the summit, finds himself in a position to pass from one valley to another with much more rapidity than his adversary, who is shut up in that one which he occupies; and the least success resulting from this attempt is followed, not only by the conquest of the principal valley, but also by that of a great number of adjacent ones.

---

* Napier's Peninsular War, vol. vi., p. 172.

It is clear, therefore, from what has been advanced, that it is easy to obtain possession of a valley occupied throughout its length, either by bearing down on its debouch, and penetrating into it with superior forces, or by descending from the heights whence it begins, after having effected the occupation of the mountains which surround it.

It should be observed, amongst the inherent defects of a position taken in the length of a valley, that its occupation can but be precarious; for a road which can be made use of as a field of battle, is a bad position to hold, and the probability of success can never be on the side of those who, posted upon a narrow and perpendicular line, are obliged to defend themselves simultaneously at the two extremities, in front and in rear.

After Soult's repulse in front of Pampeluna, he halted at San Estevan on his road to Elizondo. But Wellington was master of all the heights extending between these two places. *Three* British divisions, with one of Spaniards, were behind the mountain overlooking the town; the seventh division was on the mountain of Donna Maria; the light division and Sir Thomas Graham's Spaniards were marching to block up the Vera and Echallar exits from the valley; Byng was at Maya, and Hill moving by Almandoz just behind Wellington's position. The French army, surrounded in a deep, narrow valley, would have had to surrender and disperse, had not three British soldiers, in spite of the strictest orders to the contrary, gone marauding into the valley. The French columns at once moved out towards Sumbilla.*

When, from circumstances, it is necessary to occupy such a position, the only prospect of extricating troops from it with advantage, consists in acting upon the offensive: and nowhere is such a measure so decisive as in a mountainous district, where the difficulty of combining a counter-manœuvre is increased by the scarcity of the communications and the loss of time incident on the hazards attending any attempts to unite and act together. As circumstances change before an adopted plan can be put into execution, if the assailant follow up his movements with vigour, he will finish by obtaining a series of advantages which it may afterwards be impossible to wrest from him.

4th.—Positions taken up at the same time in the valleys and in the mountains, with the disadvantage which would result from them.

Mountain ranges always decrease in height by degrees, in such a manner, that those which border the valleys are always commanded by more elevated heights.

If, to annul this disadvantage, the valleys are occupied, and, at the same time, the surrounding heights defended, an immense space of ground will have to be covered; for, height overlooking height, the crest will finally be reached after the troops have been disseminated to defend every access. From thence results a multiplicity of detachments and outposts, the greater part of which are isolated by the anfractuosities of the mountains, without intermediary communications, and too distant the one from the other to be able to afford any mutual assistance. These would give every advantage to an enemy, who, following a direction concealed by the nature of the ground, would advance with the mass of his forces upon one single point, break through it, and attack in rear all these disseminated troops, who are bound to their several posts, and only defend the approaches which directly lead to them.

---

* Napier's Peninsular War, vol. vi., p. 156.

If the attack made in the mountains succeeds, the aggressor obtains possession of the heights which command the valleys, as well as of the roads and paths which lead to their rear: from thence he can descend on to his adversary's communications, or take up a position on the neighbouring mountains. In fact, whatever measures he takes, whether to turn the enemy's position, or to attack it openly, they are followed by very disastrous consequences for him who is attacked.

5th.—Positions taken up in the mountains, the valleys being only observed.

By merely observing the valleys, and occupying the mountains with the main body of the army, it is exposed to a false attack from the enemy, directed, with a few weak detachments, against the troops which are posted on the mountains, and accompanied by an overwhelming onset, with the remainder of his forces, upon the outposts which observe the valleys: in this case, once the aggressor is master of the valleys, he can cut off all communications with the roads and paths which lead to the mountains, stop all supplies of provisions or ammunition, menace the retreat of the troops which occupy them, and, finally, force them to abandon their position.

It may then be asked, what system should be adopted, when, in a mountainous country, circumstances require that an army *should* act on the defensive? The answer is simply this:—

Occupy the principal valleys with the main body, so as to be master of the mountains; and let weak detachments be posted to defend the mountains, inasmuch as these command the valleys, which alone possess roads fit for the movements of troops, and practicable for the transport of provisions and ammunition. To effect this, a central position should be taken up at the point of concentration of the several separate lines of operation, whilst small outposts of observation are placed in the valleys, passes, and paths, situated in the front, flanks, and rear of a position.

Amongst the peculiarities which characterize the nature of the ground in mountainous countries, it should be remarked, that an attack may be directed upon one point by several separate lines; it is, therefore, requisite to take up a central position, from whence the operations may be directed in these several directions; and this position can only be found at their point of junction. However, as it is absolutely necessary to be informed of the enemy's intentions, so as not to make any false movements, posts of observation should be placed in all the valleys, passes, and paths, in front, on the flanks, and on the rear of the position. When information has been obtained of the enemy's movements, and when it is known that he has advanced so far in one certain direction, as to have it no longer in his power to cross on to another, he may then be assailed without imprudence, either through the line of operation which he is following, or by any other which seems to promise advantageous results.

The adoption of a system of this kind, in the defence of a mountainous country, will insure to the defending party a superiority over the enemy: for an army acquainted with the country, having had time to form magazines, and to organize the means of transport, can act with rapidity and vigour, whilst the enemy has the greatest difficulty in obtaining his provisions, and in having them transported on his single line of operations.

If the defence is made in the interest of the country in which it is carried on, the countenance and co-operation of the inhabitants will present resources which are far more important in the mountains than in the plains.

By following up this system, a small number of men may successfully oppose far superior forces; for these forces cannot penetrate through such intricate districts except in isolated columns, which are unable to support one another, and are always exposed to some disaster, especially if that column whose defeat would be followed by the retreat of the others, were vigorously assailed.

But, to obtain such a result, it is necessary to adopt decisive measures, so as to deprive the other columns of the time required to effect a junction, before that one, upon which the attack is directed, has been defeated.

A central position is also to be preferred to any other line of defence, with respect to provisions; because, it being only intended to attack the divided forces of the adversary, the position is only occupied by the number of troops proportionate to the operation, and the magazines are more easily formed, as, by occupying the point of junction of the several communications, the convoys can be made to reach this point by several roads.

It should be clearly understood, that, although the advantages of occupying a central position have been insisted on, it is by no means intended that an army in such a position, should act on the defensive, but most decidedly on the offensive; for every position in the mountains, without excepting such as may be found on the heights, is exposed to the same disadvantages; viz., too much extent, too little resource in the site of the position; the detached posts in a positive dependence; a passive attitude without any power of manœuvring; and difficult retreats often through almost impracticable paths.

It would, therefore, be opposed to every principle of mountain warfare, to remain on the defensive, in a position against which the enemy could unite his forces, to attack it on all sides: for, though a position should be occupied, and a reserve posted, at the junction of several roads, this is not for the purpose of awaiting the enemy, but of being able to bear down upon him, and attack him at the decisive moment. Once the adversary is driven back, the detachments which protected the approaches to the position, as well as the main body, should re-occupy their former posts, and these offensive returns should be repeated every time that it is necessary to remain on the defensive.

In support of these principles, and to elucidate their application, we will cite the opinion of the Duc de Rohan, of Lieutenant-General La Courbe, and that of Archduke Charles, of Austria, upon mountain warfare. The Duc de Rohan, commanding the French army in the Valteline, when giving an account of the measures which he was taking to prevent the junction of the Spanish and Imperial armies, says, "This obliged me to send certain persons, expert in such matters, to reconnoitre all the passes, which were found to be innumerable; and it thus became evident, that mountains, equally with plains, not only have such roads as are well known and frequented, but many others besides, which, though unknown to strangers, are familiar to the people of the country, by means of whom the desired position will always be attainable, in spite of any efforts that may be made on the part of the enemy to prevent it; so that a judicious commander will not be solicitous about the defence of the passes, but rather determine upon awaiting his enemy to engage him in the field: although such a step might appear unjustifiable to one who had not actually witnessed the success of this system. Thus, on the present occasion, where the mountains were thought to be secured, like so many fortresses, it was found that the army was exposed on all sides, and that, as fast as one opening was closed, ten more were discovered, so that it would have required, not one good army merely, but several, to defend the country in question." *

"If the topographical situation of Switzerland be considered, with the defiles through which the enemy would have to pass to penetrate into it, the difficulty which he would find in obtaining provisions, and the obstacles, which are such, that, in certain positions, a few troops can check a great number, &c.

"I consider, that, with seven or eight thousand men, the debouches of the meridional Alps, and that part of the Rheinthal which neighbours the Grisons, can be defended until the army of the Rhine has passed the Lake of Constance, without taking into account what number must be left in the camp of Bâle and in the Friekthal, to escort convoys.

"The canton of the Valais is difficult to defend. The debouches which reach it from the Milanese and Piedmont, would lead one to think, at first sight, that a great number of troops would be required to preserve that country.

"Five or six battalions are sufficient for the defence of the valley of the Rhône; but they must not be disseminated; they must be kept in the valley, and have only outposts upon the summits of the mountains where the passes are.

"The chances of the enemy, in the invasion of the Valais, and even in the Valley of the Reuss, are all against him; for, if he has a considerable body of troops, they will die of hunger.

"The country affording him no resources, he will be under the necessity of having his convoys brought over all the mountains, either on beasts of burden, or on men's backs.

"If, on the other hand, he occupies the above-mentioned places with only a small number of men, the least reinforcement which would reach us would enable us to take back all the positions which we might have lost; for all these mountains, the St. Bernard, the St. Gothard, &c., are not positions

---

* Campaign of the Duc de Rohan in the Valteline, in 1674.

favourable for defence: he who attacks them is almost sure of succeeding.

"It is in the valleys that mountains should be defended.

"This assertion may appear strange to those who have never been engaged in mountain warfare; but, if strong reserves are placed at the debouches of the mountains, and they are made to attack the enemy after he has marched some seven or eight leagues of steeps and descents, there is every chance of his being defeated. I could cite many examples of this."*

In the military work entitled "Campagne de 1799, en Allemagne et en Suisse," which is generally supposed to be by the Archduke Charles, the author thus expresses himself:—"The theory of mountain warfare has perhaps never been so clearly and forcibly developed as during the campaign of 1799, where the belligerent armies were disputing for the possession of the elevated countries of Europe. This period, which was particularly celebrated by the course of the operations, gives a new interest to the campaign.

"Instead of crossing the heights in lines parallel to the original positions, as is usually done in countries of this nature, where it is only requisite to cross the first chain to attack another parallel to this one, or descend in the plain beyond, the army started from the positions which cut perpendicularly the range of mountains, and endeavoured to obtain possession of them by overrunning the chain throughout its length, and following the direction of its branches."

The events which succeeded these movements led to the following observations:—

"1st. That the possession of the plains prepares and secures, with reference to strategy, the occupation of the mountains.

---

* Extract of some notes upon Helvetia, addressed to General-in-Chief Berthier, by Lieutenant-General La Courbe, April 22nd, 1800. Précis des Evénemens Militaires. M. D.

"2nd. That the march of columns of any strength, and, in consequence, that of the line of operations, cannot be made except through the principal valleys.

"3rd. That a system of passive defence does not fulfil its object, and that it can only be maintained by attacking the enemy who advances.

"4th. That, for an attack to succeed, it should be directed at the same time in the valleys and upon the heights which border them; and that, to decide which of these two directions leads to the real attack, depends upon the nature of the ground and the respective positions."

The principles and observations here laid down as to mountain warfare are supported by the experience both of ancient and modern times. It was by adhering to these principles, and by applying them at the proper moment, that, in Spain, Sertorius constantly defeated Metellus and Pompey; that, in Albania, Sikander Begh braved the strength of the Ottoman empire; that, in the Valteline, the Duc de Rohan kept possession of the country, in spite of the combined efforts of the Spanish and Imperial armies; that, in the Eastern Pyrenees, Ricardos checked the united strength of the French; and that, finally, in the celebrated campaign of 1799, Generals Molitor, Dessolles, La Courbe, Soult, and Masséna, occupied and defended the Tyrol, Switzerland, and the Grisons, where they conquered and annihilated the Russian and Austrian armies.

These examples are so many proofs that, from the remotest ages to the present, a system of attack has always obtained an immense advantage, in mountainous countries, over defence, and that it is impossible for a commander to maintain himself in such countries, except by an actively defensive system, accompanied with offensive movements.

CHAPTER IX.

ON THE PASSAGE OF RIVERS.

It was clearly demonstrated, during the late continental wars, that rivers afforded no decided obstruction to the progress of an army, and that, sooner or later, any difficulty which they might present would eventually be overcome. Yet, in the complicated operations of strategy, a few hours gained or lost are of such importance, and have such material influence over the success of a campaign, that to delay the march of an enemy by opposing his passage, or to ensure to an army the means of crossing when necessary, is one of those measures which, by their success or failure, display the abilities of a general.

In the war of 1814, when Napoleon was carrying on the most brilliant campaign of his life, the neglect of his subordinates, in not providing his army with pontoon equipments, caused the failure of what to him was then of vital importance. "Monsieur le Duc de Feltre," he wrote from Troyes, February 26th, "if I had possessed a bridge equipment of ten pontoons, the war would have been finished, and the army of Prince Schwartzenberg annihilated: I should have taken eight or ten thousand carriages, and beaten his army in detail. But, for want of boats, I was unable to cross the Seine where it was necessary to do so. It is ridiculous to tell me that Paris does not possess resources for making a bridge on the higher Seine; I did not require fifty boats, but only twenty. Through the measures you have taken, the war will be finished when the boats reach me, whilst they should have been sent the day after my letter was received. All this is neglect." Again, at La Ferté-sous-Jouarre, the 2nd of March, he wrote—"Monsieur le Duc de Feltre, thanks to the exertions of the sailors of my guard, the bridge of La Ferté will be completed in one hour. If I had had a bridge equipment at Méry, Prince Schwartzenberg's army would have been destroyed. If I had had one this morning, Blucher's army was lost."*

The actual passage of a river is an operation belonging to tactics; but the selection of the point where that passage is to be made belongs to that series of operations which embrace the whole theatre of the war. The passage of the Rhine by General Moreau, in 1800, will perhaps better exemplify this position. Napoleon, a more able strategist than his lieutenant, wished him to cross *en masse* at Schaffhausen, to take Kray's army in rear, get between it and Ulm, cut it off from Austria, and drive it on to the Mein. Moreau, who already possessed a *tête de pont* at Bâle, was more inclined to cross, at his ease, in front of the enemy, than to turn its extreme left; the tactical advantage seemed to him to be more certain than those of strategy; in fact, he preferred the certainty of a demi-success to the chances of a victory which, while it would have been decisive, was yet exposed to many hazards. In the same campaign, the passage of the Po by Napoleon presents another example of the strategical importance which attaches itself to the selection of the point of passage. The army of reserve, after the combat of the Chiusella, could either march on to Turin by the left bank of the Po, or on to Genoa by crossing the river at Crescentino. Napoleon preferred first crossing the Tessino, entering Milan, and there joining Moncey, who, with 20,000 men, had reached that city from the St. Gothard; their united forces then crossed the Po at

---

* Discours du Général Pelet, à la Chambre des Pairs, sur les Fortifications de Paris, avec Pièces justi[illegible] Le Spectateur Militaire, 1841.

Placencia, for Napoleon was persuaded that he would forestall Melas, on this point, with more certainty than if he had advanced too soon upon the latter's line of retreat.

The strategical importance of a point for the passage of a river must, however, sometimes give way to the almost insurmountable difficulties of the ground, which that point may present; for every strategical point should include the consideration of the tactical advantages of the locality. If, therefore, the desired point offered local obstacles of any moment, another should be chosen, but as near as possible to the point desired. Besides, independently of the general combination, which may influence the choice of the point of passage, there is another, depending on the locality itself; and the best position will be, where an army, after having crossed, will be able to take up its front of operation and its line of battle perpendicularly to the river, at least for the first few marches, without being forced to divide itself into several corps in separate directions.*

Rivers are crossed by means of fords, permanent and temporary bridges, boats, rafts, &c.

There are two important principles to be observed, in the passage of rivers by an army: 1st, that the passage should, if possible, be effected on more than one point, to prevent confusion; 2nd, that, if the passage be opposed by the enemy, recourse should be had to stratagems, in preference to force;† for, although there are many examples of rivers being crossed by open force, such attempts have generally been mere acts of rashness, which succeeded from not being properly opposed.

In the British expedition to Washington, 1814, the Americans occupied a position of great strength, upon some heights beyond the town of Bladensburg, with their front and left flank covered by a branch of the river Potomac. The

---

* Jomini, Précis de l'Art de la Guerre, part i., ch. v.

† *Sir H. Douglas*, Milit. Bridge.

English forces were halted in the town of Bladensburg, and ordered to shelter themselves behind the houses, whilst their general reconnoitred. There was a narrow bridge, leading from the main street of the town to the continuation of the road, which passed through the very centre of the American position; but this bridge was commanded by a battery of two heavy guns, which enfiladed the bridge and the road, and two smaller batteries of two light guns each, which crossed their fire upon the debouch of the bridge; besides, the American bank of the river was covered with a narrow stripe of willows and larch trees, amongst which strong bodies of riflemen were stationed. There was also a ford, near the left of the American position, by means of which the river might have been crossed, whilst a feint was being made towards the bridge; but the English general, without endeavouring to find out whether there was a ford or not, ordered his troops to debouch from the main street on to the narrow bridge, which they succeeded in passing, chiefly owing to the inaccurate fire of the American artillery. Had the enemy been better troops, the consequences must have been fatal, since the English army might have been attacked in detail, and each brigade cut off singly, before the others could arrive to its support.*

In 1796, Bonaparte gave an example of a passage very similar. Having taken the town of Lodi, he determined to cross the river Adda at that point. The Austrians, 16,000 strong, were drawn up on the opposite bank, and the bridge was enfiladed by twenty pieces of cannon. The whole French army had sheltered itself, from the enemy's fire, behind the walls of Lodi. Bonaparte, having reconnoitred the banks of the river, ordered his cavalry to march up along the river, and endeavour to discover a ford above the bridge; he then formed a column of 6000 grenadiers, encouraged them with a few energetic words, and ordered them to debouch by the gate which opened upon the bridge; he had calculated that, from the rapidity of the movement, the column would not have time to suffer much. This formidable column closed its ranks, and debouched on to the bridge at a double. A fearful fire was poured upon it; the whole head of the column was overthrown, but, encouraged by the voice and example of its generals, the remainder marched forwards, killed the gunners, and charged the enemy's infantry, at the same time that the French cavalry, who had formed a ford, were menacing the Austrian flank: the latter were forced to retire with the loss of 2000 men.* This passage is remarkable for the boldness of the attempt, but if, instead of all the Austrian guns having been placed so as to enfilade the bridge, half the number had been left for that purpose, and the remainder placed so as to cross their fire upon the column as it debouched from the bridge, it ought not to have succeeded. Bonaparte tried the same movement at the bridge of Arcole, in the same year, but was repulsed with great loss, by the well-directed fire of the Austrians.

---

* Gleig's Expedition to Washington.

As, from motives of policy or commerce, or because an enemy in his retreat has destroyed the bridges, many rivers are destitute of them in a great part of their course, it is often requisite to construct a temporary bridge on one or more points.

When these bridges have to be erected in presence of the enemy, it is necessary—

1st. That the enemy should be deceived as to the true point of passage, so as to prevent his accumulating his powers of resistance on that point. To effect this, there should be, besides any strategical demonstrations, a false attack made in the proximity of the real point of passage; which may be done by the artillery making a great deal of noise on such points as are not in reality intended to be made use of; whilst the greatest silence should prevail at that point where the preparations are being carried on.

---

* Thiers' French Revolution, vol. viii.

2nd. The construction of the bridges should be protected, as much as possible, by a portion of the troops, having crossed in boats, taking up a position on the other side of the river, in any wood, village, or other support, so as to keep the enemy from annoying the workmen. This is termed a lodgment.

The following passage of the Marne, by the Allies, in 1814, on their march to Paris, is a good example of such an operation:—*

The day after the battle of Fère Champenoise, 13th March, 1814, Marshal Blucher ordered General Emanuel to advance by forced marches to the environs of Meaux, and, after choosing a proper place, to throw a bridge over the Marne.

For this purpose, he was detached with two regiments of infantry, one of dragoons, two companies of pioneers, eighteen guns, and a company of pontooniers. His route lay through La Ferté-sous-Jouarre, which was occupied by the enemy. Here a smart action took place, but some battalions of Prussians having joined General Emanuel, the French were beaten back, and forced across the Marne. During the engagement, the General sent the pontoons on to Trilport, and, after driving the enemy from La Ferté-sous-Jouarre, hastened thither with the rest of his detachment.

On the 15th of March, General Emanuel reached Trilport, where he found that the opposite bank of the Marne was but feebly guarded by the enemy, who had not expected the allied troops so soon, thinking, probably, that the detachment stationed at La Ferté-sous-Jouarre would hold out longer. His batteries soon cleared the banks of the French; the bridge was begun, and some Cossacks and two companies of infantry were ferried across on a raft, when they instantly

an Campaign in France, 1814. English Translation.

attacked and occupied a wood. The enemy, on learning this, sent out infantry from Meaux, planted cannon on the heights, and opened a fire on the bridge and the columns which were standing under arms on the opposite bank ready to cross. A few columns of French infantry now advanced to the bridge, and to the wood which was occupied by the two companies. To reinforce the latter, General Emanuel sent over, by the raft, two Russian infantry regiments who, charging with the bayonet, drove back the French. In the mean time, the pontoons, gliding down the Marne, were made fast one after the other; and five Prussian battalions were crossed to the opposite bank. They were followed by the dragoons. The French were pursued to Meaux, and General Emanuel posted his troops on the heights which had been occupied by the enemy. A second bridge was constructed at Trilport, and a third at Meaux; by means of which the Allies crossed the Marne on the 16th and 17th.

3rd. Large batteries of guns of position should be placed so as not only to sweep the opposite bank, but, also, to silence any artillery which the enemy might bring to batter the bridge, while it is being constructed. Hence, the bank upon which the bridge is begun should command the one opposite.

4th. A large island, near the bank occupied by the enemy, will greatly assist the troops effecting a lodgment, as well as the workmen. In the same manner, a small stream, forming a confluent, will be useful to conceal the boats assembled for the purpose of effecting the lodgment.

5th. If possible, a point should be selected where the river forms a re-entering bend, so as to afford to the troops a safe debouch, protected by the batteries, which, crossing their fire on the approach to it, would prevent the enemy from attacking the several battalions as they crossed.

6th. The point selected for erecting the bridges should have good roads in the proximity of both banks, so that the army, after its passage, may have easy communications, as well as one to assemble on. Banks which are steep, especially on the side of the enemy, should be avoided.*

Temporary bridges are made with piles, trestles, boats, pontoons or casks.

Pile bridges are more especially applicable for rapid and shallow rivers, in which boats or floating bridges cannot be made use of; but they are very liable to be destroyed by a sudden rising of the water. Napoleon erected two bridges, on piles, from the island of Lobau to the right bank of the Danube, in 1809; one was 430 yards long, and the other 273.† Piles are generally merely used as supports, or pier abutments, when deep and wide rivers are to be crossed. Pile engines form part of the French field equipments.

Trestle bridges are exceedingly useful in establishing communications across shallow rivers, when other means cannot be obtained, on account of their being easily made of rough material; but the bed of the river must be sound and firm, and the current moderate. Trestle bridges are especially liable to be destroyed by any swelling of the water.

Boat bridges consist of boats placed at certain intervals from one another, and connected by balks; the whole being planked over. When it is decided that a river is to be crossed by means of a bridge of boats, parties of light cavalry are sent to reconnoitre along the banks of the river, or of any stream running into it. This operation requires great celerity and secresy; all the boats that can be found are brought to some appointed spot, where a guard of infantry is placed for their protection.

As it might happen that the enemy had destroyed all the boats on a river, or collected them on that side of which he is master, it is usual for armies, at the present day, to take with them, into the field, a bridge equipment.

The principle upon which these bridges are constructed, is, that the weight which a floating vessel bears, is equal to the weight of the fluid displaced by the part immersed, deducting the weight of the vessel; hence the desideratum is, to displace as much water, with as little weight of boat, as possible; by which means buoyancy is combined with portability.*

---

* Jomini, Précis de l'Art de la Guerre, part i. ch. v.

† Sir H. Douglas on Military Bridges.

The bridge equipment, in use in the British service, consists of tin cylinders, divided inside into partitions, so that they do not fill and sink from a shot striking them, or from scraping on a rocky bottom. These cylinders are termed pontoons, and are of two dimensions; the larger, with hemispherical ends, is 22ft. 3in. in length, and 2ft. 8in. in diameter; the smaller, with conical ends, is 15ft. in length, and 1ft. 8in. in diameter.

A pontoon bridge is laid down in the same manner as a boat bridge, viz.:—pontoons, placed at certain distances, connected by balks, and the whole planked over.

One carriage will contain two large or five small pontoons, with their appurtenances.

The French and Austrians make use of flat-bottomed boats, about 30ft. long, each boat requiring a separate carriage for its transport.

When it is proposed to form a lodgment on the opposite bank, to protect the formation of the bridge, the troops, intended for this purpose, are pushed over in flying bridges, rafts, and row-boats.

Flying bridges are of two kinds, the swing and trail. The swing flying bridge consists of a large boat, or raft, anchored in a river, usually at a bend of it, by a cable which should measure at least once and a half the width of the river. It is carried from bank to bank by means of the current.

A trail flying bridge consists of a hawser, or chain, stretched across a river, to which is attached, by a ring or traveller, a boat or light raft. The boat is moved across by men warping on the rope.

Bridges of this description are generally used on rivers where a more permanent structure would be objectionable, either on account of its impeding the navigation, or from certain military points of view.

---

* Sir H. Douglas on Military Bridges.

Rafts are made use of in mountainous countries, where it may be impossible to convey bridge equipages; and even in flat countries, when the localities admit of it, and there are no other means of passage. The greatest objection against rafts is their low degree of buoyancy and general manageability; but they are easily constructed, and cannot be sunk by artillery fire. The best wood for rafts are poplars, firs, and pines. Rafts, ready constructed, are found in many rivers of the French frontiers and the neighbouring countries, where timber is a great article of commerce. The Isère, and the Drôme convey the fir trees of the Hautes-Alpes to the Rhône; the Moselle and the Saône, those of the Vosges; the Aragon, the Ségre, and the Cinca, receive the firs of the Spanish Hautes-Pyrénées, and take them to the Ebro; the Rhine receives the green timber of the Black Forest; the Mein, that of the Spessart; the Elbe, the pine trees of Bohemia and Saxony; the Po and the Adige, those of the Julian and Tyrolese Alps.*

Common row-boats are often employed for pushing over troops to form a lodgment. At the passage of the Adour, in 1814, by the left wing of the Duke of Wellington's army, under Lieut.-General Niddery, in forty-eight hours, from the evening of the 22nd March to that of the 24th, 6000 men and a small body of cavalry were ferried over in row-boats and in pontoons† used as row-boats. The horses were made to swim over, led from the sterns of the pontoons, and some light pieces of artillery were transported upon pontoon rafts.

Though these are the means generally used for crossing rivers, a determined body of men will always devise some expedient, when these cannot be obtained.

---

* Aide-Mémoire d'Artillerie.

† The pontoon then in use was a sort of flat-bottomed boat, tinned over, 16′ long at bottom, and 21′ at top; 4′ 10″ broad, and 2′ 3″ deep.

In the retreat of the Anglo-Spanish army across the Duero, in the month of October, 1812, the regiment of Brunswick-Oels was detached to destroy the bridge of Tordesillas: it was done in time, and a tower behind the ruins was occupied by a detachment, while the remainder of the Brunswickers took post in a pine-wood at a distance. The French arrived, and seemed for some time at a loss; but, very soon after, sixty French officers and non-commissioned officers, headed by a Captain Guingret, a daring man, formed a small raft to hold their clothes and arms, and then plunged into the water, holding their swords with their teeth, and swimming and pushing their raft before them. Under protection of a cannonade, they thus crossed this great river, though it was in full and strong water, and the weather very cold; and, having reached the other side, naked as they were, they stormed the tower. The Brunswick regiment then abandoned its position, and these gallant soldiers remained masters of the bridge.*

Another fine instance occurred in Marshal Soult's retreat from Oporto, in 1809. Having been informed that the enemy was endeavouring to destroy the Ponte Nova on the Cavado, which would have cut off his retreat to Montalegro, he immediately ordered Major Dulong, with one hundred picked men, an officer of engineers, and a few sappers, to surprize and re-establish this passage. The night was dark, and the rain fell in torrents, when the major arrived before the Ponte Nova; this bridge consisted of two wooden bays and a stone arch, the platform of the bays had been removed, and only two small beams left upon each; the torrent was furious, the beams were slippery; but the intrepid major and his men crossed upon them; one man only was drowned, the Cavado was passed, and a Portuguese outpost, which had been left at its debouch, was taken. By the next morning the bridge was repaired.†

In many marshy countries, numerous narrow canals or deep ditches are formed for the purpose of drainage, and, as these often run in cross directions, cutting one another at right angles, they present great difficulty to the march of a detachment. To cross these, the easiest plan is for a certain number of planks, each about ten feet long, to be carried by the men; these can be joined together lengthwise in a very strong manner, by lashing a plank underneath at each point of junction.

---

* Napier's Peninsular War, vol. v.

† Ibid. vol. ii.

A very simple bridge can be formed over rivers which are sufficiently frozen over to bear a man's weight. Straw about six inches thick is laid across the river, water is poured over it, and, as soon as the whole mass is frozen together, planks are laid over. These bridges will bear artillery. The Russian General Lewis crossed the Dwina, in 1812, over a bridge of this description, near Linden, ten leagues from Riga. Rivers frozen over three inches deep will bear infantry, cavalry, and light field guns drawn over by hand.

DEFENCE OF RIVERS.

When it is intended to oppose the passage of a river, every precaution should be taken to prevent the enemy obtaining possession of any kind of boat whatsoever, that may be in use on the river itself, or on any of its tributaries: this is usually done by the boatmen being ordered to bring their boats to a certain spot on the opposite bank, and, to ensure the order being carried into effect, large bodies of light cavalry should be sent up and down the stream. Any boatman found guilty of endeavouring to conceal his boat, should be punished. These boats, when collected together, should be either destroyed or strictly guarded.

As fords may be of the greatest use to the enemy, any known ford should be destroyed, by throwing in trees with all their branches on, the head of the trees being turned towards the bank occupied by the enemy; and, if the current is rapid, they may be opposed obliquely to it. If the locality does not admit of this expedient being made use of, it may be possible to hollow a trench across the ford, or throw in some harrows, which should be fixed by stakes and heavy stones.

Such obstacles may of course be cleared, but they cause the enemy much loss of time.

As soon as these measures have been taken, reconnoissances should be sent to discover upon what point the enemy will attempt a passage; whether preparations are being made on more than one point, whether he intends crossing on both points, or whether one of them is a feint. For this purpose, parties of light cavalry should be constantly reconnoitering, who, by means of horsemen placed at certain intervals between them and the main body, might give immediate information. Sir Howard Douglas recommends that light row-boats, concealed on shore during the day, should be used at night, and, descending gently with the current close to the enemy's bank, glide near to such places as are favourable for collecting boats, and see whether any sort of preparations are going on.

The army should have its several divisions so disposed, that they might oppose the first lodgment that is made by the enemy; but, in almost every case, if the troops, pushed over to form a lodgment, are properly supported by their artillery, any opposition by main force would be useless. It would be more advantageous to take up such a position as should prevent the enemy being able to proceed, after crossing the river, without a general engagement.

Attempts to destroy a bridge, when it has once been established, may be made by means of barges and trees with their roots uncut; explosive machines formed of vessels laden with shells; grenades, &c., so fitted as to explode by concussion.

Ice, when used as a bridge, is easily destroyed by cannon. At Austerlitz, large bodies of Russians, endeavouring to escape over some frozen marshy lakes, were totally destroyed by a battery being turned upon the ice and breaking it before them.

Stone bridges can be destroyed by hollowing through the platform of a bridge, in the shape of a cross, as far as the exterior curve of one or more arches; this hollow is filled with powder, and the reaction of the elastic fluid against the partitions is sufficient to destroy them.

A barrel of powder, or an auget, supported by small vertical beams under the arch of a small bridge, will blow it up. This method is especially practicable for streams of little depth, running between high banks.

Wooden bridges are burnt, either by surrounding their piles with dipt bavin lashed with wire, or by heaping these faggots on the platform. They may be blown up, by suspending a barrel of powder with ropes under one of the bays; the piles may also be destroyed, by placing a barrel of powder attached to them at the water level.

The French, in their retreat to Bayonne, made use of a very ingenious method to delay the pursuit of the British.

When the English reached the bridge of St. Jean de Luz, which was constructed of timber, the first bay, or interval, between the bank and nearest upright frame-work supporting the superstructure, was so far consumed as to render new beams and planks necessary, before any passage could be effected. The repair was commenced immediately, and completed in about an hour and a half, when the second bay was discovered to be on fire, and so far damaged as to require renewal. The officer employed, while his men were repairing this also, carefully examined the under side of the remaining bays; but, as the beams supporting the roadway were planked underneath as well as above, nothing appeared that gave the least indication of these being injured. The repair of the second bay was completed about ten o'clock, and a considerable portion of infantry passed. In about an hour and a half afterwards, the third bay was discovered to be on fire, and so far damaged as to be considered unsafe. While the repair of the third bay was in progress, the remaining bay was partly unplanked, to see if the cause of this combustion, at periods varying from one and a half to two hours, could be discovered. Between the top and bottom planks, three boxes were formed, about two feet long and nine inches wide and deep, containing a fuel already so far decomposed by ignition that its nature could not be ascertained. The enemy's intention, in which they completely succeeded, was, it would appear, to destroy the different bearings at intervals, that we might not find out the extent of the injury all at once, so as to prepare the necessary means of repair for the whole; and doubtless they gained, by so doing, several hours more time to get out of the way.

PART II.

CHAPTER I.

ADVANCED POSTS.

An army in camp or cantonments, as well as on the march, should never lose sight of the important maxim, that it must be ever prepared to engage the enemy; for the exact moment when it may be attacked can seldom be clearly foreseen. Yet this necessity of being ever on the alert would soon cause excessive fatigue, had means not been found to remedy this, by entrusting the safety of the army to a certain portion of it, whilst the remainder is permitted to take repose.

For this purpose, one or two regiments of cavalry and a battery of horse artillery, taken from the reserves of these two services, are added to a division of the army, which brings up its numerical strength to somewhere about a third of the whole force. This forms the advance-guard, which, usually from two to five miles in front of the main body, is entrusted with the two-fold duty of observing the enemy, giving timely notice of his approach, and, when necessary, keeping him in check until the main body is prepared to act on the offensive or defensive.

That this advanced guard may not be unnecessarily fatigued, about a third part is organized into detachments formed from each branch of the service, which are thrown forward, so as to occupy every approach to the camp. These detachments form the advanced posts. Light cavalry is the branch of the army most generally made use of for this purpose, as it is better able than any other to support the fatigues of all kinds which this duty imposes, and to follow up the movements of the enemy, as well as rapidly and without loss to abandon positions which it may be neither desirable nor possible to defend. Cavalry, however, that it may not be exposed to the enemy's skirmishers, requires to be supported, in woody countries, by infantry.

The safety of an army, and the success of the measures taken to insure the operations, depend chiefly on the vigilance of advanced posts; the officers commanding them should, therefore, never forget, that, on the one hand, they are intended to form an impenetrable curtain, behind which the army should be able to execute all its movements, without their being either discovered or suspected by the enemy; and that, on the other hand, they should endeavour to find out every movement of the enemy,—which is the more difficult, at the present day, that armies, no longer carrying tents, and often not forming magazines, can put the greatest rapidity into their movements, and easily screen themselves from troops possessing but little vigilance.

The distance at which advanced posts should be from the corps they are intended to protect, depends on the nature of the country and the position occupied by the enemy; one principle, however, is necessary to be observed, which is, that the main corps should have time to prepare against any attack of the enemy: thus, in open countries, the advanced posts are placed at from 2000 to 3000 yards, but in hilly countries, at a much shorter distance; besides, there are many positions sufficiently strong in themselves to allow of the army, occupying them, not pushing forward its advanced posts to a distance. When the army is on the march, the advanced posts are furnished by the advance and rear guards of each column; but when the army is in position, the advance and rear guards usually then re-occupying their place in the army, the advanced posts are furnished by the troops which form the first line.

Advanced posts, having reached their ground, in order to keep the communication with one another, and for their own safety, push forward out-posts; and, lest these out-posts should by any chance be suddenly driven back to the main body, they are supported by advanced piquets. Sometimes, the advanced posts themselves are supported by strong bodies of troops, which either march to their support, or upon which they can fall back. These are usually posted by night only; but, if circumstances do not allow of these posts of support, their place is supplied by a piquet, which remains with the main body of the army, and is ready to march at the first signal.

The advance post, having reached the position which it is intended to occupy, pushes detachments forward to observe the enemy. It is under the protection of these detachments that the general commanding, or the officers of his staff, reconnoitre the ground, for the purpose of determining the *cordon* of the out-posts (that is to say, the lines which the videttes are not to pass) and the principal positions to be occupied by the piquets; besides this, they give any instructions they may think necessary in case of any particular event. The trace of the *cordon* of vedettes or sentries is usually determined by the course of a river or stream, the edges of a ravine or marsh, the outskirts of a wood, or the ridges of neighbouring heights, &c.

Until the advanced posts are properly placed, the whole army remains under arms; the men for the grand guards are told off, receive provisions and forage, and are then posted; the detachments which protected the reconnoissances then join their several corps, and the army is permitted to repose.

Such is the regular system of placing the advanced posts, but it is often deviated from, as the fatigue of the troops and their distance from the enemy lead to inattention in these necessary precautions, the neglect of which is so often dearly paid for; it also often happens that, after a long march, there is not sufficient daylight left for these operations to be made with proper care; and thus many mistakes frequently occur.

It is according to these principles that a regiment or detachment should establish the outposts which are to watch over its safety; they, however, are placed much closer, as, being weak in numbers, they would otherwise be easily cut off; and besides, the main corps being likewise small, it can more easily take the defensive.

Care should always be taken, when tracing the *cordon* of outposts, to extend it beyond the flanks of the army it protects, in order to prevent their being turned: patrols are sometimes pushed to a great distance, to ward off this danger.

The numerical force of an advanced post is determined by the strength of the enemy, the number of outposts required, the patrols to be made, and the distance between the advanced post and its support.

Outposts should be placed so as to discover everything going on around them without being seen themselves; they are, therefore, usually posted upon heights, and are protected from observation by every available obstacle, such as hedges, walls, houses, clumps of trees, &c. If possible, they should not be placed in a village, as the soldiers would then be likely to stray from their posts; neither should they ever be placed opposite obstacles that are near enough to them to protect a surprize: if there be a village, a wood, or a field with high standing crops, and sentries cannot be placed beyond, it would be more prudent to station the outpost at some distance; for, however strict a watch may be kept, the post will always be much exposed, and the vedettes placed near the obstacles, may be suddenly attacked. This was one of the principal causes which led to the defeat of the French army near the Bidassoa, 7th October, 1813.

General Maucune's division occupied the chain of mountains bordering the right bank of the Bidassoa, between the mountains of Louis XIV. and the sea; the allies occupied the left bank. The French army was always under arms at four, A.M., and the men were not broken off until the reconnoitering parties had returned. On that morning, Maucune's division had remained under arms until nine, A.M., and could not send out a reconnoitering party, on account of the river in front being at high water. During the night, the Spaniards had descended the mountain of San Marcial, and had placed themselves in ambush behind the walls and fields of maize which bordered the Bidassoa, almost in front of Behobia. As soon as Maucune's division had broken off, the Spaniards, under General Frere, crossed the Bidassoa, which the low tides had made fordable; the English, under General Graham, crossed it at the same time opposite Andaya; and, by a well-concerted attack, the French were thrown back upon Urrugna. Had patrols been sent across the Bidassoa, as soon as the tide allowed of doing so, this defeat might have been anticipated.

The main body of an advanced post should, if possible, be placed near the junction of several roads; it will then be more free in its movements, and the smallest outpost detached from it can easily fall back upon it; in any case, its retreat should be secured. Ground which is favourable for many reasons, may yet present difficulties to the movements of the troops; the officer commanding should then send for proper tools from the neighbouring houses, whether to cut down a hedge, or fill up a ditch, or knock down a wall, &c., as he may find necessary.

It is no less essential, in order to avoid a surprize, that the vedettes should be protected by some obstacle which would prevent the enemy from bearing down upon them with *too much* rapidity. To effect this, stone bridges should be barricaded; wooden ones have their planks sawn through; defiles should be choked up; and this is promptly effected by means of waggons, ladders, trees half sawn through, empty barrels, &c.

Advanced piquets are placed at from 400 to 500 yards from the main body which furnishes them; their strength depends upon the number of their vedettes, in the proportion usually of three men to each vedette; these posts should be relieved every four hours, to repose the horses, as, until they return to the main guard, they should not be unbridled, and, if any danger be expected, the men should not be allowed to dismount.

There are certain localities strong enough of themselves, or that have been made such, which will not require advanced piquets; but these are very scarce. The main guard should never lose sight of its outposts, or the latter of their vedettes; when localities do not allow of this, flying vedettes should be placed.

A vedette has an evident advantage over a sentry; from his elevated position, he can see further, and the swiftness of his horse enables him to escape from danger, and give information sooner. They should be relieved at least every two hours; and oftener, if the weather be cold, or the men be new levies, or the enemy be supposed to be in the neighbourhood.

The distance of vedettes from the outposts is, generally, from 400 to 500 yards; their distance, therefore, from the main guards, is from 800 to 1000 yards. The reason why they are placed at these distances is; 1st. Because the men can with difficulty see further, even in fine weather; 2nd. To afford time for the main guard to advance to the support of its outposts, if these are attacked. This would require about three minutes, and the enemy would only take three minutes to gallop over 1000 yards; but, except under most unfavourable circumstances, vedettes will always see 200 or 300 yards further, which would give plenty of time. We suppose, in this calculation, that the nature of the ground does not allow of barricading the approaches to the outposts; otherwise, the delay occasioned to the enemy, in getting over them, would give ample time to those attacked.

In many cases, vedettes should not only be placed in front, but also on the flanks, and sometimes in rear of the outposts.

If possible, vedettes should be doubled, so that, if any object is to be examined, or any individual to be arrested, their attention may not be divided; and that there may be one vedette to accompany the prisoner, whilst the other remains at his post.

From all these details, it must be clear that the enemy will have to break through four lines of defence before reaching the main corps; viz. vedettes, outposts, advanced piquets, and the main guards: sometimes there will be a fifth post of support.

The officer commanding an advanced post, should obtain all the information he can about the communications of his outpost, whether with the neighbouring ones or with the enemy: he should reconnoitre the position which is to be occupied at night, and its place for watering, as well as the roads to be made use of by the patrols; he should rectify the position of the vedettes and outposts; if requisite, examine the disadvantages and advantages of the neighbouring country, in case of defence or attack, and consider how he would effect his retreat, if necessary.

Similar reconnoissances should be made by the officers under him.

The horses are usually watered previous to the post being occupied; but if they have to be taken from the post to a watering-place, only about one-fourth should be allowed to be absent at a time, and one or two horsemen should be placed between the main guard and the watering-place, to give notice of any attack. If there should be any great danger in sending the horses to the watering-place, it might be preferable to make the inhabitants bring water in barrels and buckets.

The detachments forming the advanced posts, should always take their rations with them; but if this cannot be done, the greatest precaution should be taken when foraging.

The commander of an outpost should watch everything that goes on, and allow no one to come or go unquestioned; the vedettes should frequently be visited both by him and those under him.

Vedettes should watch every movement of the enemy; observe the number of his vedettes and sentries, the road taken by his relieving parties, the strength of his patrols, the time of day when the patrols are made, any dust rising behind a hill or village occupied by the enemy, the usual hour when the trumpets or drums are heard; whether the enemy's generals have been seen along his line of vedettes, &c. When relieved, they should make a patrol before joining the main guard; for the oftener patrols are made, the greater will be the security. Vedettes should not allow any one, either coming from or going towards the enemy, to pass their post without a pass. Suttlers should on no account be allowed near an advanced post, as they are frequently nothing but spies. All persons endeavouring to pass the vedettes by stealth, or who refuse to stop when called upon to do so, should be fired at: if they are taken prisoners, they should be detained by the vedette, until he is relieved, and then sent on to the main guard.

Outposts established to watch a river, should obtain information about all the fords which may be passable at high or low water, and the boats should be collected together and carefully guarded. If the Austrians, who defended the bridge of Laufen, on the Solga, in 1800, had paid attention to this, three Frenchmen would not have swam across this river and taken a small barge, by means of which a whole battalion crossed the river, and, falling upon the rear of the Austrians, obliged them to retire with considerable loss.

The passage which the Duke of Wellington made, in 180 of the Douro, was also owing to a small boat having evade the French patrols, and crossed, during the night, to th opposite bank; it was at once seized by the British, and thre persons crossing in it, returned in half an hour with som large barges, in which troops were sent across to effect a lodgment.

If a deserter presents himself, he should be disarmed before he is allowed to pass, and should be sent under escort to the main guard. If many present themselves, they should not be permitted to approach the vedettes without previously throwing away their arms, and the commander of the main guard should take precautions before receiving them.

As soon as a vedette perceives a body of men advancing, he should warn the outpost of it; the officer of which must, in his turn, warn the main guard. If this body should prove to be an enemy, the outpost fires, the main guard advances to its support, and the whole retire, in good order, upon the post of support.

When an outpost is attacked, the other outposts should immediately mount; the commander of the advanced post should send an officer to examine whether it be a false attack, or a stratagem of the enemy to gain a position from whence to reconnoitre.

Advanced posts should, at all times, remember that they are not to stand on the defensive, but are merely placed to warn the army; and that they should, if attacked, retire steadily.

When an envoy from the enemy presents himself at the outposts, he should be accompanied by a trumpeter or drummer; if he advances without this precaution, he should be made a prisoner, and immediately sent on to the main guard, and from thence to the head quarters. Great precaution should be taken to prevent the envoy from obtaining any information from the men at the post, or examining the approaches and *strength* of the posts, as a surprize might afterwards be made by the enemy in consequence of the information thus obtained. Indeed, these missions have very often no other object than to make observations. If the army is executing a movement which the enemy ought to be kept ignorant of, the envoy should be detained till it is made.

The officer commanding the main guard, should give instant information of anything that may happen; he should, besides, send in reports at certain stated times.

Orders may be given to the commander of an advance guard, to escort a general officer who desires to make a reconnoissance. He should then place his detachment so as to accomplish this object in the best way he can; this is generally done, by throwing out skirmishers beyond the vedettes, and placing patrols between these skirmishers and the general. These movements should be concealed, and troops sent out to protect the general's retreat, if necessary.

If, on the other hand, the enemy is endeavouring to reconnoitre, the commander of the main guard, warned by the vedettes, should inform the general officer of the day, and make every effort to prevent the enemy from reconnoitering the ground which it may be desirable to conceal from him, until a reinforcement has been sent to enable him successfully to engage the troops protecting the reconnoissance.

At night, the posts are either drawn closer in, or made to take up new positions at the same distance from the enemy as they were in the day time. The intention of this movement is, to deceive the enemy as to the exact positions of the advanced posts, in case it had been designed to have taken any of them by surprize; besides, it is usual to concentrate an army more at night than in the day, that it may the better defend itself against an attack.

The officer commanding an advanced post should never forget that the safety of the troops in rear, perhaps even that of the whole army, depends on his vigilance; that great responsibility falls upon him, and that he must, therefore, be constantly on the watch; he should frequently visit h vedettes, or sentries, especially in rainy or windy weather.

When a vedette hears anything at night, that seems susp cious, he should immediately advance a few paces, in order t find out what it is; if the noise continues, the vedette shoul fire, and join his outpost; but he should take care and not fir needlessly, as any animal, or a rustling of the leaves, might have occasioned it.

If a man deserts from the advanced post, the commander should be immediately informed, and a patrol sent to acquaint all the vedettes and outposts of the circumstance.

If many deserters present themselves, a place should be assigned to them to pass the night; but at a sufficient distance from the vedettes, to prevent their being surprized; and on no account should a deserter be allowed to pass a vedette without being previously disarmed.

One of the most remarkable surprizes, caused by neglect of the above precautions, was that of Hochkirch, 16th October, 1758.

Frederic, King of Prussia, had left the Austrian army on his right flank, and neglected to place outposts on his rear; a few days before the surprize, swarms of Croates kept harassing the Prussian advanced posts, and endeavoured to keep up false alarms, to which, however, no attention was paid. On the night of the 16th, Austrian pioneers approached the Prussian outposts, and made large *abattis* in a forest; and, keeping up a continual noise by calling to one another, their cries and axes were heard in every direction. Under cover of this noise, the Austrian army formed on its left flank, and directed several divisions upon the rear of the Prussian camp, in order to surround it. The Austrian advanced guard was composed of cuirassiers, each having a grenadier behind him.

Towards five o'clock in the morning, pretended deserters presented themselves at the Prussian advanced posts; their number increased every moment, and soon outnumbered the

Prussian main guards. The latter became alarmed, but were immediately overpowered, a fog favouring the surprize, which was soon revealed by the flames of the camp on fire. The Prussian valour and discipline, aided by Frederic's coolness, saved the army from total destruction; but they retreated with a loss of 8000 men.

It is especially at night, that the silence of nature enables the slightest noise to be heard; when the noise seems to come from a certain place for any length of time, it may be supposed that troops are approaching. If the enemy takes more than usual precautions with his outposts, if his fires become less bright, it is most probable that he is decamping; an almost certain sign of this is, when the shelters of the bivouac are set on fire, an imprudence which shews there is but little discipline; this is often done by young soldiers.

About two hours before daylight, the commanding officer of the advanced post should order all or part of his men to mount, and, when the day begins to dawn, should send out two reconnoitering parties, commanded by officers, who, taking different directions, search the country, leaving vedettes at certain distances, to form a chain between them and the outposts, and approach as near as possible to the enemy's vedettes, to find out if there is any ambuscade to be feared. The two reconnoitering parties, having described a semicircle, meet again; the commander of one of them remains with the most advanced vedette, whilst the other returns to the main guard, to give in his report. If, from his report, there appears to be no danger, the commanding officer re-assembles his men, and takes up his position for the day.

As soon as he has arrived there, he leaves his men under the charge of his lieutenant, and, accompanied by an escort, visits himself the vedettes; if he finds that the report made to him is correct, he orders those vedettes which had been left, by the reconnoitering parties, to join the main guard, and places others in the positions occupied the day before. The horsemen sent to reconnoitre, are usually the first that are posted as vedettes; however, if the day is foggy, it is as well not to occupy the position of the day before, until the fog has disappeared.

When the outposts and vedettes are posted, a patrol should be sent to see if the enemy has changed the position of his outposts.

It is usual for the troops, in camp or cantonments, to be under arms every day before day-break, and for reinforcements to be sent to the advance posts, to enable them to reconnoitre in safety, or to relieve them.

These measures are taken, on account of the uncertainty as to the movements which the enemy may have made during the night. The troops in camp should not be broken off until the reconnoitering parties have returned.

If the officer commanding an advance post, receives information that the army is going to break up its camp, he should take all the precautions possible to prevent the enemy's perceiving it; but none of his precautions should be such as to be noticed by the enemy's vedettes. The enemy's movements should be watched, his reconnoitering parties kept back, and patrols made as usual beyond the line of vedettes, and much oftener within the *cordon*.

Especial care should be taken that no one gets access to the enemy, and, likewise, that none of the men at the outposts be aware of the movement. The road taken by the army should be made known to the officer; and, if the retreat is made by night, it would be better to have it marked out by a few detachments.

There are certain precautions to be observed, when the ground is covered with snow, and the enemy has a strong body of light cavalry. The horses should be rough shod, and the road to be taken might be marked out by stakes, each having a small bundle of straw attached to it; for, if there are several roads crossing one another, it is very easy to lose the right one. These measures are particularly useful when a post is to be occupied only for a few hours.

When the time has arrived for the advanced post to retire, the main guard is ordered to mount, the vedettes and outposts are brought in, and the whole rapidly follow the army. The enemy is unable to begin the pursuit, until he has sent out his reconnoitering parties, and they have brought back information of the retreat of the army; but, before this, a couple of hours, and perhaps more, will have elapsed, during which time the rear guard will have made considerable progress on their march.

Sometimes troops are left in the camp, in order to deceive the enemy. It was thus that Frederic succeeded in deceiving the Austrians, August 14th, 1760. Being nearly surrounded by them at Leignitz, in Silesia, which afforded but a feeble defence, he was informed of their design: he immediately broke up his camp, the same night, in the greatest silence, leaving a few squadrons of hussars and some peasants, to keep up the fires and make patrols; he then took up a strong position near the one he had lately occupied. The Austrians, thinking to repeat the scene of Hochkirch, fell into the midst of the Prussians, who were well prepared to receive them; and a sanguinary engagement, by night, took place, in which the Prussians were the victors.

Before concluding this chapter, it may be useful to consider the aptitude of different nations for the duty of advanced posts.

It is with difficulty that the French can adopt precautionary measures; that careful vigilance, so necessary in war time, does not agree with their character; and the private soldier is always ready to accuse his chief of timidity, when he sees him inclined to adopt them. It results from this, that perhaps no other army is so often surprized; for, as soon as the enemy is no longer facing them, they forget all danger; and, often, the first enemies to be encountered by an officer commanding an advanced post, are his own men.

The Russian armies are always surrounded by swarms of Cossacks and Tartars, wild tribes whose customs give them great advantages in the service of outposts. Inhabiting immense plains, sleeping in tents or under waggons, always on horseback, swimming across rivers, wandering about their deserts, they have but few wants; the Ukase which calls them to war, is for them a signal of pillage; often without pay, the conquered country, overrun by them in every direction, supplies them with every necessary. Almost useless in the day of battle, Cossacks, like tormenting insects, harass the troops on their march, and cut off the stragglers; or, prowling about at night, they endeavour to surprize the outposts, a duty in which they have become very skilful, through their constant wars against the Turks and the tribes of the Caucasus.

Austria possesses a corps of light troops, superior to those of Russia: Hungary furnishes an unrivalled body of light cavalry; Croatia and the Bannat, a warlike infantry.

The Croates, Hungarians, and Cossacks, are generally married, have homes, and their language is but little known: desertion is, therefore, rare among them; and little if any information can be obtained from them, since it is seldom they can be questioned.

The English are steady and vigilant; and, from the peculiar organization of their army, not only dragoons and light cavalry, but infantry of the line and light infantry, are employed on the service of outposts.

The foregoing considerations should induce officers to do their duty, when on outposts, with the utmost strictness, and, in no case, to tolerate an infraction of their orders. When a war is carried on in an enemy's country, they must increase their vigilance; for the enemy may have, among his troops, men who possess a knowledge of the localities occupied: and, though the fortune of war is changeable, and the most *prudent* conduct will sometimes not prevent a defeat, yet it is always disgraceful to be surprized, as this shews a want of vigilance; and that man deserves a severe punishment, who has allowed troops, immediately under his command, to be taken, or has exposed an army, that trusted to the vigilance of its advanced posts.

CHAPTER II.

RECONNOITERING THE ENEMY.

A RECONNOISSANCE of this nature has for its object the examination, secretly or by open force, by day or night, of the position, the strength, and the movements of the enemy.

If desired that it should be secret, it is usually performed by a cavalry detachment of from thirty to a hundred men, who may have to advance several hours', or even several days' march from their point of departure; if open, it is usually done by the commander-in-chief, who, with a large force, drives in the enemy's outposts, and keeps them engaged, until he has effected his purpose.

We shall, at present, confine ourselves to the first of these.

To be able to reconnoitre with any accuracy, requires quickness of eye, presence of mind, a great deal of prudence and resolution, and sometimes even a thorough knowledge of warfare. For a detachment sent on such an expedition may meet with many obstacles: it may be ignorant of the exact locality occupied by the enemy, who, having perhaps been informed of the march of the detachment, has laid a snare for it; the inhabitants may be hostile, or the country may present difficulties; finally, if the enemy should conceal his manœuvres in a clever manner, it will be necessary, either to glide in between the troops which mask these, or to surprize and drive them back, so as to effect a footing near the enemy, and obtain information of what goes on.

The officer who has the command of a reconnoitering party, should be able to speak the language of the country, or, at least, have with him one or two men who can do so. Without this precaution, he will probably fail in his expedition, from his inability to question either the prisoners he may take, or the inhabitants with whom he may meet. A good telescope is also more necessary on such an occasion than on any other; and, if he has not an accurate map of the district which he is to go over, he should obtain an outline sketch of it from the quartermaster-general's department. It would be an advantage, if, on these occasions, guides could be dispensed with; but this is a necessary evil, if he is not very well acquainted with the country.

Before starting, he should have the object of the expedition clearly explained to him; and, as it is probable that he may meet with some accident or opposition, he should also be instructed what course to pursue in such an event.

Although the time of departure and the nature of the detachment seldom depend on the officer who is to command it, still it is useful to know what principles should be followed in such circumstances.

If a reconnoissance is to remain secret from the enemy, it should, generally speaking, start either at dusk or during the night. This is the only means of its departure not being betrayed too soon, as it is then easier to march unperceived between the enemy's outposts: and, before daylight, the detachment will find itself in that part of the country which is occupied by the enemy, yet beyond the radius of the circle of his particular vigilance, as well as that of the ground patrolled. Besides, if the detachment is discovered, it can, during the night, mislead the enemy by taking another road, so as to avoid a failure at the very beginning of the operation.

In a wooded country, and with good guides, by turning from a distance the positions occupied by the enemy, the march can be made during the day, and his rear reached with comparatively little danger; but it is possible that such a long and circuitous route will cause the loss of much valuable time.

The views of the general who orders the reconnoissance, the greater or less number of troops spread over the country by the enemy, their vigilance, &c., will, of course, influence the line of conduct to be adopted on such an occasion; but, to obtain immediate information, it is often necessary to send out reconnoitering parties during the day time.

The reconnoitering party should not be of any strength, otherwise it will be difficult for it to conceal its march; a small force seldom excites attention, as, from its very weakness, it cannot be suspected of running into danger; besides, it is not intended to engage, but merely to observe. For these reasons, fifteen or twenty horsemen are in general sufficient, as such a number is quite able to resist the small patrols of the enemy: but, of course, it would be much increased, if it were known that the enemy had a numerous light cavalry, which only sent out strong patrols; or, if the detachment had to follow some direction determined beforehand, in which it would be likely to meet with the enemy's troops.

The men composing a small reconnoitering party, should not be chosen by the roll-call; it would be more prudent to select those who are well mounted and of some experience. Recruits might occasion the total failure of the enterprize, as it requires a great deal of resolution for a small number of men to adventure themselves among the enemy's troops; and, although prudence is necessary, at the same time, boldness, and the knowledge of when to expose himself, are no less essential in the soldier on reconnoitering duty. A detachment of twenty horsemen should have at least three non-commissioned officers; each of them able to assist the commander in a moment of danger. Besides, when selecting the detachment, the possibility should not be overlooked, that it may become necessary to detach a few men with information to head-quarters. A reconnoitering party of about fifty men should have more than its usual number of officers.

Light cavalry is the branch of the service most suited for a reconnoissance, as this requires celerity in the movements, and as they are able to pass almost anywhere. Infantry, too slow in its progression, becomes useless when it is necessary to go to a distance; but there are certain localities where it would be useful as a support to cavalry: for instance, it might with advantage be made to occupy a defile through which the cavalry would have to return, after having reconnoitered the country in front.

We shall here suppose that a reconnoitering party consists of twenty horsemen; it will thence be easy to understand what measures should be taken, if it were of greater strength.

The advance guard should consist of a non-commissioned officer and three men, together with a mounted guide. The non-commissioned officer is ordered to keep a uniform pace, and not precede the main body by more than two or three hundred yards; he himself should be preceded by one horseman who knows the language of the country, and can answer the challenge of the enemy. This advanced guard should on no account fire, except in case of its being cut off, but should fall back upon the main body, at the appearance of the enemy; or, if circumstances will allow of it, it should remain stationary, and send back a man to report the occurrence.

The rear-guard should consist of two steady men, who will keep at a distance of about two hundred yards, and will give instant information of anything they see or hear. The main body will have the officer and one non-commissioned officer at the head: the other will be on the left, in rear; he will pass on, from mouth to mouth, what he hears from the rear guard, and will leave a horseman at every cross-road, to inform the rear-guard of the right direction.

The detachment will march at a trot, and in the greatest silence. No smoking must be allowed at night. Every obstacle, which can conceal the march, should be taken advantage of; such as woods, hedges, paths, cornfields, vineyards, &c.

Men detached for the purpose of reconnoitering the flanks of the road, should not go to any distance; otherwise they may lose themselves, fall into the enemy's hands, or alarm him sufficiently to induce him to find out the cause. Besides, having to wait for them would much delay the march. Therefore, for a rapid march, made by night, it is better that the men should keep united, and have neither flankers nor rear-guard; the detachment will thereby be less exposed to lose men; and this is of consequence, for, if one man were made prisoner, it might put the enemy on the track of the reconnoissance.

On the other hand, if the march be made in the day-time, it would perhaps be useful to have flankers.

It has already been stated, that a detachment should halt at the foot of a height or upon its inclination, and have the plain upon the opposite side examined, previous to continuing its march: in the day-time, the movements of the enemy, and, at night, their fires, can be perceived. In certain countries, during the autumn, cattle are pastured at night, and their shepherds light fires, which might be mistaken for those of the enemy, and *vice versâ:* this should, therefore, be guarded against.

When the detachment passes near some locality supposed to be occupied by the enemy, and it is of importance to discover whether it be so, a halt is made. The commander sends out one or two patrols, and, during their absence, the remainder of the men are, if possible, placed in ambush. If the patrols report anything extraordinary, the officer should see to it himself.

If the locality where the enemy is supposed to be, is a village, it is easy to ascertain the fact, if at night. A challenge in a foreign language, any noise whatsoever, may discover how the village is occupied. The guide that has been provided should be sent there to obtain information. This man, being a native of the country, will not excite any suspicion; but his fidelity should be well ascertained beforehand. If he cannot be depended on, two of the detachment being dismounted (one of whom knows the language of the country) should go towards some isolated building, listen to what is said there, knock at the door, question the inhabitants with kindness, and induce one of them to come out and speak to the officer. The latter will be obliged to go himself, in case he has no one with him who can speak the language. There is also a very good way of obtaining news of the enemy; which is, to declare oneself a deserter, and request to be taken to their nearest detachments. This has often been resorted to, and has often succeeded.

In case that the detachment is following a road which passes through a village, it is clear that it should not adventure itself without taking some such precaution; for it is not every village that can be turned, especially at night.

If information is obtained of the enemy having sent any troops into the district through which the detachment is passing, either to reconnoitre, make requisitions, or for some other purpose, inquiries should be obtained, from the local authorities and inhabitants, as to the strength, organization, &c., of these troops; from what corps they were detached; by what roads they came and went; and the conversation of the men.

Sometimes a reconnoitering party is sent for the purpose of obtaining such information: this will require great sagacity on the part of the officer, as the answers he obtains may be either insufficient or purposely incorrect.

During the day, whatever the strength of the detachment may be, or the object for which it is sent, it is necessary, if the reconnoissance presents any difficulties, that the men, when near the enemy, should be divided into two or three sections, which should conceal themselves, and echelon one another; the worst mounted men being placed in the rear echelon.

The distance at which these sections should be from one another, must of course depend on the nature of the country, which may more or less afford them concealment. If possible, they should be placed a little in rear of a cross-road, and in such a way as to be able to watch one another, and see anything that may take place on their flanks. A mile or a mile-and-a-half, between the first and last echelon, would be about the distance.

The commanding officer should then advance with two or three well mounted men, and effect his reconnoissance. The attention of the enemy will not so soon be drawn towards so small a body, which the least obstacle will conceal from their view; and, even if discovered, it will be some time before any pursuit will be attempted, as the enemy will be at first unable to make out whether they are friends or not. In case of being pursued, the commanding officer should immediately join the first echelon, which, suddenly shewing itself, will induce the enemy to halt, through fear of falling into a snare; and they will become still more cautious, when the first echelon falls back on the others successively. The officer must keep his presence of mind, and have near him some eight or ten well mounted men, who, in roads of no great breadth, should be able to keep back a far greater number opposed to them; and, by occasionally fronting the pursuers, and sabring one or two of the most obstinate, the remainder may be made to slacken their pursuit. From time to time, he should halt his men to breathe the horses, and then continue his retreat at a rapid pace, when the enemy approaches. This manœuvre, repeated two or three times, will soon induce the latter to retire. In such a case, it would be advisable not to keep along the whole length of the road by which the detachment came; but to go across the country, especially if it is wooded, so that the enemy may either lose all trace, or fall into an ambuscade. It is most probable, that the enemy will give up the pursuit through apprehension of the latter contingency. If the enemy follow up the pursuit with vigour, and there be danger of the detachment falling into his hands, it should be divided into three or four sections, each under the command of a non-commissioned officer, to whom some tower, church, or windmill, would be indicated as a rendezvous. By this means, some part of the detachment will escape, and bring back the expected information.

Whenever a reconnoitering party has not received a special order to bear down upon a particular point, it should endeavour to reconnoitre as much ground as possible; and to effect this, it should avoid returning by the same road, unless something of importance has been discovered. Although a reconnoitering party should, as much as possible, avoid an engagement, this principle ought to be sacrificed to the necessity of making prisoners, when it has been impossible to obtain information otherwise.

Such are the general principles which, together with those given in the "MARCH OF DETACHMENTS," will be found the most useful for directing the march of a reconnoitering party. We shall now proceed to explain their application, commencing with the reconnoissance of an enemy encamped or in cantonments.

This operation will require the reconnoitering party to pass between the enemy's outposts, or, at least, approach very close to them, in order to discover the position or the cantonments which they protect. In the first case, it will be necessary to start at night, so as to get through the enemy's outposts before daylight. This measure may also be useful, though not absolutely requisite, in the second case. To succeed in such a mission requires either a thorough knowledge of the country, or the assistance of a trustworthy guide who can indicate with precision the points where a passage can be effected or an ambush formed. In some localities, there are commanding positions which expose the movements and position, of the troops that are there, to be discovered from a distance, either with a glass or even with the naked eye: in such case, they must be approached with caution.

For a reconnoissance of this kind, daybreak is the best time, as then the enemy gets under arms, and the several roll-calls are made throughout the camp. The cavalry take their horses to water; the troops that have been cantoned, leave the villages, and perhaps occupy a position for the day. Their strength can then be estimated: but the inconvenience is, that the enemy's patrols usually start at daylight, and, consequently, the reconnoitering party runs great risk of being perceived. It is, therefore, indispensable to be ambushed, at an early hour, in some spot sufficiently convenient, both for making the reconnoissance, and for observing the movements of the advance posts, so as to be able to avoid meeting their detachments. If the nature of the country does not allow of this precaution being taken, and the outposts can only be approached, without the power of getting in between them, it would be more prudent to remain at a distance until the enemy's patrols had returned to their camp, and then approach them by degrees. Besides, it may be necessary to make this movement after a long night's march; and as, in case of being pursued, it would be requisite to take up a quick pace, the horses should therefore be reposed for an hour; which would be attended with danger, unless at a certain distance from the enemy.

The detachment will keep a careful look-out; a few men, having dismounted, will be ordered to reconnoitre carefully round about the ambuscade, and discover if any body of men are marching in that direction; some plunderer or straggler, always found roaming in the neighbourhood of a camp, some peasant who may have left the enemy's cantonments, will perhaps pass near the ambuscade; he should be immediately seized and questioned, and, if necessary, be made to lead the detachment to some position more favourable for reconnoitering.

The French army of the South was in position in rear of the Léez, near Lembege (Basses-Pyrénées), in the month of February, 1814; this district is intersected with narrow and deep valleys, and covered with woods and quickset hedges. Marshal Soult, wishing to be informed whether the neighbourhood of Orthez, and the road from Bayonne to Tarbes, was occupied in strength by the Allies, or whether the whole of their army was in front of his, sent Captain Dania of the 5th Chasseurs, with a hundred men, to reconnoitre. This detachment was, moreover, to alarm the enemy, by some partizan stroke on his rear.

Leaving Momy, where the head-quarters lay, at nightfall, with good guides and through difficult paths, Captain Dania marched upon Hagetmau, a small town situated upon the road from Orthez to Saint-Sever. Arrived in sight of it at daybreak, after a march of eight long leagues, he made a halt, to refresh the horses and men, and, during this time, sent secretly to know what was going on in the place. On receiving the information that every one was asleep, he pushed forwards rapidly, entered the town at a gallop, instantly placed vedettes at all the debouches, and searched the principal houses, picking up about a hundred English, and forty horses, and setting free a great number of prisoners who had been taken at the battle of Orthez. Meanwhile, his vedettes announced the approach of a body of infantry; he then assembled his detachment, and continued his march upon the road to Pau, where he finished his reconnoissance, and, finally, returned to head-quarters.

This movement furnishes an example of a reconnoitering party directing its march upon the extreme left of the enemy's positions with the object of turning them, attempting a partizan exploit, then changing its direction, taking notice of everything of importance upon the enemy's rear, and finishing the circle by returning to Tarbes.* It should be observed that the surprize of Hagetmau was only undertaken to alarm the enemy, as, in any other case, it would have been a serious error, by attracting attention to the march of the detachment.

As the reconnoissance of an enemy's forces is seldom made without that of his position, the officer commanding the detachment should examine its approaches, and the obstacles which these present, together with its extent and its points of support. Lines of tents, the smoke of the bivouacs during the day, and the fires during the night, indicate pretty clearly the outlines of a position.

The officer commanding will not suffer himself to be discouraged beforehand by any difficulties which such a reconnoissance may present. At the foot of the heights which form a position, there are generally to be found some villages and farm-houses; the enemy cannot occupy them all; the inhabitants will be able to give information as to which road leads direct to the position, or by which it may be turned, and for what branch of the service it is practicable. If the woods or thickets are occupied by the enemy, the officer should find out their nature, and whether there are ravines, villages, or defiles, upon the heights. The enemy may make requisitions in the neighbouring plains, the nature of which will give some approximation to a correct estimate of his strength; patrols that are accustomed to frequent some particular wine house may have made use of language which it would be desirable to know.

A mission of this nature may be designed to effect an approach to the cantonments of an army blockading a fortress, for the purpose of discovering whether there is any intention of besieging it. It is usually easy to obtain this information with precision, by bearing down upon the army's line of communication with its depots, when it can be ascertained, from the inhabitants, whether heavy artillery or war ammunition has been transported in that direction, whether the troops are employed making fascines or gabions, whether requisitions have been made for trenching tools, and in what direction all these objects have been brought together. Observations to the same purpose should be made, when a reconnoitering party is sent from a fortress to discover whether the enemy contemplates any serious designs against it.

---

* This enterprize was so well executed, and extended to such a distance from the army, that it was attributed to partizans, and supposed to indicate a disposition for insurrection. Under the influence of this idea, Lord Wellington seized the civil authorities of Hagetmau, and declared that he would hang all peasants caught in arms, and burn their villages.—*Napier's* Peninsular War, vol. vi.

The officer in command, having reconnoitered the several positions occupied by the enemy, may be under further orders to continue his observations for some days, and take an account of the enemy's movements: this dangerous mission can only succeed in woody and mountainous countries, or when the enemy is weak in cavalry. The night should never be passed in the place that had been occupied during the day, and the detachment must be constantly on the alert; no fires must be lighted; and the horses should be unsaddled as seldom as possible. Reports should, from time to time, be sent to the general; and, for this purpose, two horsemen should always be sent together: but, if the services of a native can be secured, it is the safer plan to send the reports through him, taking care to shift quarters immediately after his departure.

During part of the Seven Years' War, Lloyd,* then in the Austrian service, was entrusted with a mission of this kind. He had a detachment of 300 men, of whom 200 were hussars; and, in spite of the activity of the Prussian light cavalry, he kept constantly close to the enemy, observed all their movements, and informed Daun of them. He says that he never lost but one man, and that was through drunkenness. This war was carried on in Bohemia, Silesia, and the mountainous part of Saxony, countries very favourable for enterprizes of this nature; and most of the inhabitants were well affected towards the cause which he served.

---

* Humphrey Lloyd was born in Wales, 1729. He served with distinction in the Austrian, Prussian, and Russian armies. On his return, he surveyed the coasts, and wrote a Memoir on the Invasion and Defence of Great Britain, a History of the Seven Years' War, and other military works.

A column on the march can be reconnoitered with much greater facility than when in position, as it is merely requisite not to lose sight of the flankers; whereas, in the latter case, the reconnoitering party must keep upon the flanks or rear of the enemy, which is always difficult, in consequence of the cavalry movements which are constantly being made in these directions; as to keeping in his front, it is evident that the difficulties are still greater, unless he displays excessive negligence.

Reconnoitering parties are sent out on the front and flanks of an army, after a decisive engagement, to obtain information of the movements of the enemy, who, by a well-concerted measure, may have succeeded in eluding the pursuit of the victors. In such a case, it would be very useless to take all the precautions which have been indicated. It is requisite to know what roads the enemy has made use of in his retreat, and the strength and organization of the columns which have taken such or such a direction. The tracks of men, horses, and stragglers, the wounded that have been abandoned, &c., questions addressed to the inhabitants, or prisoners made from a detachment of the rear-guard, will give the necessary information, which must be acted upon at once: rapidity is, in such a case, absolutely necessary, and is the more meritorious, because the cavalry will most likely be much fatigued; but care should be taken to ascertain the correctness of the information communicated, otherwise the army might be led into some irreparable error. It is especially here that the disadvantage of a badly recruited and badly commanded *cavalry* becomes seriously manifest; and that bravery in the field will not dispense with the necessity for endurance on the part of the men, added to vigilance and sagacity in the cavalry officer who is charged with the duty of making the reconnoissance: in vain would it be objected that the horses are too much fatigued to march further; those of the enemy are as much so, and yet they can manage to escape.

A reconnoissance of this kind having been carelessly made, after the battle of Austerlitz, was the cause of the French army making a false movement. The corps of Marshal Lannes, with the cavalry of reserve, took the road of Olmütz, upon which the enemy was supposed to be in retreat; nothing, however, was met with but his baggage and parks: the Allies had taken the road to Hungary through Göding; and all the orders had to be countermanded.

A similar event took place after the battle of Ligny, 1815, but the consequences were very serious. It was only the next day, towards ten o'clock, that the reconnoitering parties fancied the Prussians had retreated to Namur, although this was not really the case: erroneous orders were consequently given, and it was discovered, a little latter, that they had marched to Wavres; much precious time was lost, and Blucher joined the English, at Waterloo.

An army in retreat should not neglect to send patrols upon its flanks, to give an account of the enemy's movements; but, if this duty is executed in a careless manner, the consequences may prove most fatal. The Prince of Hohenlohe received a proof of this, when retreating after the battle of Jena. He was escaping from the French, who were in pursuit, when he reached the neighbourhood of Prenzlow. The combat of Wischmansdorf having revealed to him the presence of a French cavalry corps upon his right, he hesitated as to which road he should take to reach Stettin upon the Oder: if he marched through Prenzlow, he would be near the enemy, but, at the same time, he was sure of being able, in that town, to supply his troops with provisions, of which they were in the greatest want; if, on the other hand, he marched through Passewalk, he was more certain of escaping, but this road possessed fewer resources. He advanced to Boitzenburg, passed the night there, and, next day, sent out a reconnoitering party towards Prenzlow. The officers of hussars, fatigued, did their duty badly, and reported that the French had not appeared near the town, and that they could obtain no information of them. Their general, trusting to this communication, marched to Prenzlow; but his troops had scarcely entered the town, when Murat, with his cavalry, charged the rear of the column, and forced the Prussians, 12,000 strong, to capitulate.

A reconnoissance sent for the purpose of discovering whether the enemy is in movement to attack, may be carried on in the following manner.

The commanding officer, being warned by his advanced guard that the enemy is in sight, or having arrived near the locality occupied by them, orders his detachment to ambush; he then joins the advance-guard, and, accompanied by a few horsemen, bears forward to reconnoitre.

If he has marched upon the same road as the enemy, it is probable that he will discover nothing, as the latter will be protected from observation by his advance-guard and flanking parties. He will, however, be able to estimate the strength of the advance-guard, and, if the enemy's column creates much dust, he may form some idea of its strength; but if the hilly country will not allow of his obtaining a view of the plain occupied by the enemy, or if the latter, descending from the mountains, does not expose his force to observation, his report will necessarily be incorrect. In general, therefore, at the first appearance of the enemy's scouts, it is more advantageous to take to the country on that side of the road which appears the most favourable for reconnoitering; and then bear forward, or select some spot for an ambuscade, such as the rear of a hill, or a wood, and be constantly on the look-out, as the flanking parties of the enemy will most probably approach the detachment.

Notice should be taken of what branches of the army the enemy's troops consist; their composition, their strength, in what kind of order their artillery marches, the direction taken by the column, and whether it appears ready for an engagement, the state of the baggage, &c. The regularity, or otherwise, of the march, will afford means of judging as to whether the troops are fresh or fatigued: thus, when, on a good road, the column is seen to lengthen, soldiers and horses forming a straggling mob, it is to be supposed that they are fatigued; on the other hand, when order is preserved, the baggage close together and in the rear of the column, and all the officers at their posts, it may be inferred that the men are fresh, or that a hostile movement is intended.

Before continuing his observations, he should be careful to send word by two well-mounted horsemen, that the enemy is marching towards the camp, cantonments, or otherwise, and that, in a few minutes, he will send a more detailed account.

Some officers, either from timidity or ignorance, return to the camp at the first appearance of the enemy, and make a false report. They talk of columns which exist only in their disturbed imagination; they have seen a strong advance guard, and clouds of dust which announce numerous bodies of troops; they justify the disorder of their retreat by adding, that they have been hotly pursued, &c. Hence, the uncertainty in which a general officer finds himself, by not being able to reconcile these reports with others which reach him from different quarters, and which perhaps state, that the enemy is quiet, and only detaching a few patrols.

A brave and intelligent officer never allows himself to be deceived by first appearances. He endeavours, in every possible way, to ascertain with precision the designs and the strength of the enemy, notwithstanding the curtain of light troops by which the latter is protected. What has he before him? Is it the advance-guard of a considerable force, or a body of troops detached to the front, in order to conceal a flank movement? Is it a small detachment, or a reconnoitering party which, to conceal its own weakness, endeavours to make its force appear more numerous than it is?

There are very few countries in which an officer, entrusted with such a mission, cannot make use of some obstacle to assist him in his design; since a few horses may easily be concealed by a house, or a large bush, a clump of trees, fields of corn or hemp, vineyards, the ditches along the road, a hollow, &c.

Whenever a reconnoitering party has not received strict orders to confine its observations to some particular road, it should go over as much ground as possible, and in several directions: it will thereby be enabled to discover any of the enemy's corps which may have concealed their march. If, before having reconnoitered, the party is discovered, it should immediately retire; but if the country will allow of its returning by some other road, this should be done, and the party ambush on the enemy's flank.

When it is impossible to make a secret reconnoissance, it is absolutely necessary to endeavour to make prisoners, from whom some information can be obtained. Thus, Marshal Davoust, hearing vague reports as to the Prussians marching from Weimar against him, and knowing neither their strength nor their movements, sent his aide-de-camp, Colonel Bourke, with the 1st Chasseurs, on the 13th October, 1805, to reconnoitre beyond the defile of Kösen. This officer, meeting with a reconnoitering party of Prussians, charged them, and took some prisoners, who gave part of the required information; and this was soon completed by a Frenchman, a deserter from the King of Prussia's guards.

If the enemy is encountered at no great distance from the camp or cantonment, a skirmish should immediately be engaged with his advance guard, the detachment meanwhile retreating slowly and in good order; by this means, the troops have time to run to their alarm posts, some of the party being, at the same time, detached at a gallop, to warn the advance posts of what is going on.

There is a reconnoissance which requires not only intelligence, but also a great deal of intrepidity, both on the part of the officer commanding, and, likewise, in his men: it is that which becomes necessary when a general is informed that the enemy is making a flank movement, but does not know positively in which direction it is made, or with what strength. Such an expedition is the more difficult, that the enemy rarely fails to conceal such a movement by strong detachments, between which it is necessary to break through: but if he has placed a river between himself and his adversary, (as was the case with Benningsen, in 1807, when falling back upon the right bank of the Alle, to march upon Friedland; or like Barclay de Tolly, when crossing to the right bank of the Dnieper, after the taking of Smolensko,) it will, perhaps, be necessary to cross this river, either by swimming or by a ford, in order to reconnoitre the march of the enemy which is made parallel to its banks. Such a reconnoissance is too perilous to be attempted during the day, unless under very favourable circumstances.

The line of conduct to be followed is simple enough. It is necessary to have a good guide, and a detachment of well-mounted men who can be depended upon, headed by an officer or non-commissioned officer, who can speak the language of the country. The detachment, having reached the point where it is likely the enemy will be met with, forms sections of threes, and marches across the country, so as to avoid the patrols, which are sure to be met with along the roads. The march should be made rapidly, and in the strictest silence; the reconnoitering party never retiring at the appearance of a small force, but, on the contrary, passing close to it, answering its challenge laconically, to the effect that they are bearers of despatches, and never returning its fire, in the event of its being directed upon them.

A watchful silence will most probably enable the party to hear the sound of the column which is supposed to be on the march. By halting, from time to time, for a few seconds, which will allow of hearing better, some sound or other will be sure to betray the march of a numerous body, notwithstanding all the precautions that may have been taken. As soon as the direction from which the sound proceeds has been ascertained, the pace should be slackened, and every endeavour made to discover the strength and the description of the enemy's troops.

If the reconnoitering party suddenly fall into the enemy's column, it should immediately gallop through, crying out, in the language of the column, that the enemy is in pursuit: this will most likely create a great confusion, and afford the facility, either of re-crossing it, or of waiting until it has gone by.

Thus the enterprize will be found, on reflection, to be much less dangerous than it appeared at first: for, if discovered, there is little to apprehend from cavalry during the night, as, by dispersing the party, or reaching some safe spot, the enemy will soon lose all trace, and will, besides, be afraid to adventure himself; and as to infantry, the worst will be a few ill-directed shots. It is, therefore, most probable, that, with a good guide, the reconnoissance will be made quietly.

An army, when about to engage, should send large detachments of light cavalry of observation upon its flanks, which will give warning of any movements that the enemy may make, during the engagement, to turn its position.

The commanding officer will bear down to the distance ordered, and establish himself upon some convenient spot from whence he can discover a certain extent of country, or, at all events, upon some central point of the several communications which could be made use of by the enemy for the anticipated movement. The commanding officer will keep a reserve by him, and send out patrols commanded by officers and non-commissioned officers, in the most favourable directions: he will order them to keep continually moving, and require some to approach as near as possible to the enemy's flank, so as to be able to watch the direction taken by any corps detached from it. They should make no halts, either for the refreshment of men or horses, as is but too often done; but should, on the contrary, be always on the look-out, and keep up their communication with the commanding officer by means of horsemen left in the rear at certain intervals. As soon as any report of importance has been made, the commanding officer should verify it himself, unless he can place implicit confidence in the officer who has made the report, in which case he should send immediate notice of it to the general. It is most essential to insure correctness with respect to the supposed number of the enemy, and not to mistake a body of light cavalry, intended to create an alarm, for a considerable force that would be able to execute some serious enterprize. It is in such a case that an officer requires a quick eye and great presence of mind, to enable him to discover the line of march and the means of the enemy, and send in a report which can be depended upon.

Similar reconnoissances are made, when observing the course of a river, for the purpose of opposing the passage of it by the enemy. On such occasions, it is important to be prepared for the feints which the enemy is likely to make in order to draw off attention from the real point of passage; these are frequently effectual, but it cannot be denied, that, in many cases, the ignorance betrayed by officers of all ranks, who may be ordered to discover the strength and means of the enemy, as well as the negligence evinced in their incautious manner of proceeding, contributes greatly to the success of these feints.

OFFENSIVE RECONNOISSANCES.

Reconnoissances of this nature are made with large detachments formed of each branch of the service; and, although such operations are usually commanded by general officers, it may be useful to give some idea of the method in which they are carried on.

These reconnoissances sometimes take place simultaneously upon the whole length of the enemy's position, and sometimes, upon some particular point. Secret reconnoitering parties having failed to penetrate near the enemy, and nothing satisfactory having been found out by the spies, it becomes absolutely necessary to throw back the advance posts upon the main body, and force the latter to display its strength.

Light cavalry usually takes the lead of the expedition, as it is requisite to march briskly forward; some companies of tried infantry, and a few guns, accompanying it. The troops which follow, are posted at the several openings, either to support the attack, if necessary, or to protect the retreat. The advance posts are driven back, and pursued without delay; any prisoners made are instantly questioned, and some position is occupied, from whence a reconnoissance can be made. It is probable that, if the nature of the country is in the least degree favourable, the enemy will not at first be able to oppose any well-connected resistance to the first attack, and that a few moments will be obtained, during which his position and strength can be observed. Patrols are immediately sent out in several directions, to prevent the enemy from endeavouring to outflank the reconnoitering party, and thus cut off their retreat; and the engagement is protracted until, the general having seen everything, and the staff officers having made a sketch of the ground, the troops can be allowed to fall back.

If the enemy, being prepared, drives back the reconnoissance before it has fulfilled its object, the cavalry should retire skirmishing, rapidly reach some point where the enemy is less on his guard, and endeavour to surprize him. If he withdraws any troops from the point first attacked, fresh men should be brought to the attack, take possession of it, and the reconnoissance succeeds.

When effecting an offensive reconnoissance, a general has not always the intention of engaging, but still he should be strong enough not to fear an attack, and to be able to drive back any patrols which may be met. It is more especially in a broken country, and when the enemy has a strong force of cavalry, that a strong detachment is required.

If an enemy is well protected by his outposts, there are few things more difficult than to discover his movements. The following account, by General Pelet,* of the reconnoissance which preceded the battle of Essling, 21st May, 1809, will illustrate this position:—

"On the 21st of May, between twelve and one o'clock in the morning, Marshal Masséna reconnoitered the line of outposts. Various reports were made, of a rear-guard, from 4000 to 5000 strong, who were retreating. The marshal asked me what I thought of it. I answered, that, as I could perceive a glimmer along the horizon, extending about three miles, it must be the enemy's bivouac; and that, from the works carried on during the last three days, added to the cannonade of the previous evening, we had the whole of the enemy before us; but that it was easy to make certain of it from the steeple of Aspern. The marshal went up there, and, recognizing the truth of my observations, returned to the Emperor. At daybreak, the Emperor was on horseback. The marshals, around him, all disagreed as to the enemy's movements. Lannes considered that there was only a rear-guard, of from 6000 to 8000 men, which ought to be at once overthrown. Bessières relied on the reports of his cavalry, who had assured him that nothing had been encountered for several leagues. Masséna, who had acquired experience by a long command, was certain that the whole Austrian army was in front, and Mouton agreed in this. Napoleon, anxious to satisfy himself, advanced beyond the ridge of Aspern; but he could get no further, owing to the enemy's light cavalry having approached since daylight. It was necessary to await the cavalry, before this mask could be penetrated. Reconnoitering his own position, Napoleon was passing continually between the outposts and the bridges. About one o'clock in the day, I was at the lines of the furthest outposts. Skirmishing began; the ground, rising gradually in front of me, concealed what was going on beyond. Suddenly, I saw three heavy masses directing their march on our left flank, and, as they crowned the ridge, forming order of battle. Thirty thousand men were advancing, in an oblique line, towards Aspern, the key and support of the position. I at once went to warn the marshal of the approach of the columns, which, in five minutes, would be upon him. He ordered me to send General Molitor to his support, and to announce the state of matters to the Emperor."

---

* Mémoires de la Guerre en Allemagne, de 1809, par le Général Pelet, tom. iii., pp. 284, 294.

It should be borne in mind, that, a reconnoissance having been effected, the troops which were made use of for the purpose should be withdrawn, as, though they might have found it necessary to engage the enemy's outposts, there never can be any further utility in exposing a single division to the whole strength of the enemy, a measure which could only be attended with a useless waste of life. This principle was strikingly exemplified in the action at Rámnugur, on the 22nd of November, 1848. Lord Gough, with the advanced body of the British army, moved forwards to reconnoitre the position of the Seikh army. The latter, on his approach, retired to the right bank of the Chenaub, leaving a strong advanced guard on the left bank, near Rámnugur. This ground was intersected by two or three nullahs (dry water-courses), running parallel to the river. Beyond these nullahs was the high bank of the river, or rather, its natural boundary, when the waters of the Chenaub gain their hyemal force. Beyond this high bank, a wide extent of heavy sand disclosed itself to view, at one time the bed of the overflowing waters. In the middle of this sand, might have been seen what once had been a large green island. Here and there, small banks or insular prominences were scattered about. The river took a tortuous course, and the ground was dotted with pools of water.*

As the British forces advanced, the Seikh advance-guard also retreated across the river, sustaining much loss from two troops of horse-artillery; but the latter, incautiously following up this temporary success, advanced into the heavy sand. The consequence of this was, that they soon got within range of the Seikh guns of position from the other bank; and, when the horse-artillery was ordered to limber up and retire, one of the guns was found so firmly fixed in the sand as to be immoveable, and, although every exertion was made, and many lives were lost, in the attempt, it had finally to be abandoned.

Elated with this doubtful triumph, the Seikhs then lined the bank of the river, and kept up a fire with their matchlocks, which, however, did no damage; and, as the English troops retired, they advanced to seize the gun.

The English general had effected his reconnoissance; and nothing more could be done, to any purpose, without being reinforced: but, annoyed with the Seikhs' marks of defiance, he ordered H. M. 14th light dragoons, with the 5th Indian light cavalry, to drive them from the bank; and much valuable life was sacrificed, including Colonels Havelock and Cureton, without any benefit whatsoever having been obtained.

---

* Second Seikh War, by E. Thackwell.

CHAPTER III.

PRECAUTIONS TO BE TAKEN BY DETACHMENTS ON THE MARCH.

A DETACHMENT is any portion of a corps or of an army, disconnected from the main body for some particular service. A detachment may therefore consist of fractions of one or more divisions, or even of entire corps, taken from each branch of the service.

The question presents itself, for what purpose is the detachment intended? is it to reconnoitre? is it to lay an ambush? is it to escort a convoy? to form an advance or rear guard? or is it simply a detachment leaving the depot to join the army?

Although these several circumstances may influence the commanding officer as to details, still, the principles which shall be laid down, apply to all of them more or less. For, in any case, the detachment is supposed to march and act in a military manner, that is to say, with all the precautions which the real or possible neighbourhood of the enemy may render necessary.

The officer commanding the detachment, should perfectly understand the nature of the service required of him, and he should endeavour to execute it without, in any way, departing from the orders he has received. He is in no case answerable for the consequences of these orders; the responsibility resting on the general who sends him. Should circumstances, *however*, prevent the execution of the orders to the letter, he should conform himself to their spirit; always keeping in view the honour of the service. It is in such cases, that an officer who can adopt a plan of his own in an able manner, will shew that he understands his profession and may be entrusted with difficult commands.

Before starting on the march, he should carefully inspect the armament and equipment of the detachment; see that the baggage is together, that the horses are properly shod, and that the necessary ammunition and supplies are provided.

The precautions necessary for the march of an army, are equally indispensable for that of a detachment; they cannot, in either case, be overlooked without imprudence, and for the following reasons:—Any body of troops, when marching, is, to a certain degree, in a state of weakness; the men will not keep together, the column gradually lengthens, and occupies more space than when in order of battle. The order of march can seldom be made use of, in attacking or receiving an enemy, and the nature of the ground to be gone over is seldom favourable for an engagement; it is, therefore, necessary to have some sort of advance-guard, so as to obviate a sudden attack, and give the main body time to form.—Hence, any corps whatsoever should be preceded by a smaller number, who will reconnoitre the ground in front, and give notice of the approach of the enemy. The same precautions should be taken in rear, to prevent a surprize from an ambush, and to maintain discipline. A detachment has, consequently, its advance and rear guards.

The advance-guard should always march in perfect order, that it may be constantly prepared to meet the enemy. Its immediate commanding officer should detach a few men to reconnoitre the ground in front and on the flanks. No spot likely to conceal troops should remain unsearched. Suspicious, but without timidity, he should examine the road, and endeavour to discover any traces of men or horses: if any occur, he should observe the direction they have taken; he should stop any persons he may meet on the road, and question them, at one time with kindness, at another with threats, according to circumstances; if they appear to suspect, they should be searched; and no one should be allowed to pass the detachment in the direction of its march. Vigilance is more particularly required, in the officer, when marching through woods, defiles, or villages.

Unless when following a high road, or when well acquainted with the country, he should never risk a march, in war-time, without guides; and, even when following a high road, this precaution should be taken; for some chance circumstances might oblige the detachment to leave it: but the guides should, at all times, be strictly watched.

Any men detached from the advance-guard, for the purpose of reconnoitering, should always remain in sight; if one of them disappears, the reason should, if possible, be immediately ascertained: and, as the duty of these men is very arduous, (having to march across fields, and to go over much more ground than the detachment,) they should be relieved from time to time. It is of the utmost importance to reconnoitre thoroughly all roads that debouch from that one which is followed by the detachment; for it is by these roads that an enemy might attempt an attack. In such a case, he should be kept in check until the main body has passed by. Any occurrence of moment should be at once reported to the commander of the detachment.

The advance-guard should always remain at the distance which it has been ordered to keep from the main body; and, in winding roads, where it might be lost sight of for some time, one or more horsemen should be left in its rear, to keep up the communication. No particular rules can be given as to the strength of an advance-guard, for it will depend on that of the detachment, the necessity of having the road well reconnoitered, and the difficulty of doing so. A long column *requires* more time to be formed in order of battle, than a small one; there are fewer positions of which it could make use; it is more easily thrown into disorder: the advance-guard should, therefore, be able to support itself for some time without assistance, as, if attacked, it will most probably be only by an advance-guard. It is usual to form it at about one-fifth or one-sixth of the detachment, and to organize it in the same way as the main body, according as the nature of the country is more or less favourable to infantry or cavalry.

When the advance-guard reaches a hollow road or village, a patrol should be sent forward to search it thoroughly, and information of the circumstance transmitted to the commanding officer; that the main body may be halted, until it is ascertained that the men can continue their march in safety: but if the reconnoissance taken in the defile makes this measure appear unsafe, one or two horsemen are sent on in front, and the main body, divided into several sections, which follow each other at some distance, marches rapidly and steadily through the defile.

If the march is a secret one, the advance-guard should not enter any villages or towns, but turn them by a circuitous route.

There are many defiles so long, that a thorough reconnoissance on the march cannot be effected before the main corps enters it. Such defiles are often found between rivers and a chain of mountains. A troop of cavalry should be very careful when marching through such places, as they afford great facility for infantry ambuscades; it should, therefore, avoid forming a continuous column: for example, a hundred horse should be divided into six or eight sections, and their distances much increased; they will thus present a greater extent of empty space to the fire of an enemy ambushed on the sides of the defile.

It is a fixed principle, that, if possible, no body of troops should enter a defile, until possession has been taken of the heights which overlook it—a precaution often neglected. If the advance-guard suddenly finds itself in presence of the enemy in a defile, or at its outlet, it should fall back upon the main body, which is then either placed in a state of defence, or made to retire; but if the advance-guard has not been perceived, it may remain motionless, and information be sent to the main body; or, if it is in sufficient strength, it might charge the enemy, and thus give time to the main body either to prepare for an engagement, or to get out of the defile.

An advance-guard, having reached the foot of a height, should there halt, or at least do so before reaching its summit; for it must be ignorant as to whether the enemy, who may have perceived it from a distance, does not wait for it in ambuscade: for this reason, flankers should be made to advance in such a manner, that, without exposing themselves to view, they may be able to discover whether the height, or the valley on the other side, conceals an enemy. The commander of the advance-guard should himself make this reconnoissance, if he mistrusts the zeal or the ability of his men.

A defile may be defined to be a road, the sides of which are of such a nature that cavalry and artillery must keep to the road itself, and which, therefore, prevents a detachment from taking up a position. A bridge, for instance, may be said to be a defile. When, however, it consists of a narrow road, commanded by heights on each side, these heights can be occupied by infantry, who can protect the passage of the other troops. The passage of the Khybur Pass, by General Pollock, in 1842, although performed by an army, may serve as a lesson to any smaller body of men. The Pass, from the entrance on the Peshawur side to the debouch on the Jellálabád road, is twenty-eight miles in length, and, with the exception of the valley of Lalbeg-gurhee, six miles in length by one and a half broad; it is commanded throughout, and there are but few places where an army advancing could find cover.* The country round about is inhabited by fierce mountain tribes, and the following was General Pollock's order of march.*

---

* Hough's Army of the Indus.

Brigadier Wild was to command the advance-guard, and General M'Caskill the rear. At the head of the column marched the grenadier company of H. M. 9th foot, one company of the 26th N. I., three companies of the 30th N. I., and two companies of the 33rd N. I., under Major Barnewell, of the 9th. Then followed the sappers and miners, nine guns (viz., four horse-artillery, two mountain-train, and three foot-artillery), and two squadrons of the 3rd dragoons. After these, the camels moved on, laden with all the treasure of the force, and a large portion of the ammunition; and they were succeeded by a squadron of the 1st native cavalry. Next came the commissariat stores, protected by two companies of the 53rd N. I., and these were followed by a squadron of the 1st cavalry. Then the baggage and camp followers, covered by a Ressálah of irregular horse and a squadron of the 1st native cavalry, moved forward, with a further supply of ammunition, and litters and camel-panniers for the sick. The rear-guard consisted of three foot-artillery guns, the 10th light cavalry, two Ressálahs of irregular horse, two squadrons of the 3rd dragoons, two horse-artillery guns, three companies of the 60th N. I., one company of the 6th N. I., and one company of H. M. 9th foot.

These formed the centre column which was to make its way through the Pass. Two other columns, composed entirely of infantry, were to crown the heights on either side of the Pass.

The right column consisted of two companies of H. M. 9th foot, four companies of the 26th N. I., and 400 Jezailchees, under Colonel Taylor; seven companies of the 30th N. I, under Major Payne; three companies of the 60th N I, under Captain Riddle; four companies of the 64th N I, under Major Anderson; and a company and a half of H. M. 9th, with some sappers, under Major Davis.

---

* It would, of course, be advisable to have a whole regiment together, instead of detached companies. But, in the first Affghanistan war, the Sepoy soldiers had very much fallen in repute, and General Pollock, anxious to re-establish the character of that branch of the service, detached European companies to inspire them with confidence.

The left crowning column consisted of two companies of H. M. 9th foot, four companies of the 26th N. I., and 200 Jezailchees, under Major Huish; seven companies of the 53rd N. I., under Major Hoggan; three companies of the 60th N. I., under Captain Napleton; four and a half companies of the 64th N. I., and one and a half company of H. M. 9th foot; these last were to be accompanied by some auxiliaries supplied by the chief of Lalpoorah.

The flanking parties were to advance in successive detachments of two companies, at intervals of 500 yards: and the following rules were laid down for the guidance of commanding officers:—

"A bugler or trumpeter to be attached to each commanding officer of a party or detachment of the several columns.

"Whenever an obstacle presents itself, or an accident occurs, of a nature to impede the march of any part of either of the columns, and to occasion a break in its continuity, the officer in command, nearest to the spot, will order the halt to be sounded, which will be immediately repeated by the other buglers, and the whole will halt, till the removal of the difficulty enables the columns to proceed in their established order, when the signal to advance will be given.

"The baggage-master will superintend the placing of the baggage, &c., in the order prescribed, and the Major-General commanding requests that commanding officers will use their best exertions to facilitate this important object. The Quartermaster of each corps will see that the baggage of his regiment is placed in its proper position in the column, and an officer from each is to be appointed to the duty.

"No private guards are to be allowed. The parties of cavalry and infantry, allotted at intervals in the line of march, are to be the only troops attending it.

"The officers entrusted with the command of the parties which are to flank the rear-guard on the heights, must give their most vigilant attention to the important duties of preventing their men from hurrying in advance of it; its rear must never be left exposed to fire from the heights.

"The troops to be told off on their regimental parades, as above detailed, and marched at the appointed hour to their respective posts.

"The force will march to Jumrood to-morrow morning, in the order above prescribed. The general to beat at four, and the assembly at five o'clock. The baggage and camp followers of each corps are to be kept with their respective regiments till notice is given, by the baggage-master, that they are required to take their places in the column."

Previous to entering the Pass, further and more specific orders were issued.

CAMP JUMROOD, APRIL *4th*, 1842.

"The force to be under arms to-morrow morning at half-past three o'clock, ready to move forward, at which time all the treasure, ammunition, baggage, &c., will be moved to the low ground to the right front of the hills now occupied by piquets. No fires are to be lighted on any account; no drums to beat, or bugles to be sounded. The six companies of the 60th regiment, and six companies of the 33rd regiment, will remain with the baggage in the vicinity of the treasure and ammunition. The parties for crowning the heights, under the command of Lieutenant-Colonel Taylor and Major Anderson, will move forward to the hill on the right of the Pass. The parties for the same duty, under the command of Major Huish and Lieutenant-Colonel Moseley, will, in like manner, move forward to the hill on the left. Lieutenant-

Colonel Taylor's party will be accompanied by the Irregulars who lately garrisoned Ali-Musjid. Captain Ferris's Jezailchees will accompany the left advancing party. When the heights have been crowned on both hills, the four companies of the 9th foot, and the eight companies of the 26th, under Lieutenant-Colonel Taylor, and Major Huish, as also the Jezailchees under Captain Ferris, will descend the hills to be in readiness to enter the Pass. Six horse artillery guns, four from the foot-artillery, with the two mountain-guns, will be drawn up in battery opposite the Pass. The advance-guard, seven companies of the 30th, and seven companies of the 53rd, will accompany the guns; the whole of the cavalry will be so placed, by Brigadier White, that any attempt at an attack from the low hills on the right may be frustrated. When the baggage, &c., is directed to advance, the same order of march will be preserved as was formerly prescribed, with the following alterations: six companies of the 60th N. I. will be together on the right, and the six companies of the 33rd, now arrived, will follow the 53rd N. I. When the rear of the column is entering the Pass, the two rear companies of Lieutenant-Colonel Moseley and Major Anderson's parties should descend the hills."

Across the mouth of the Pass, the Khyburees had erected a strong barricade, whilst they covered the heights on either side. But so effectually did the flanking columns do their work, that the mountaineers were driven from their rocks, and the assailants turned the barricade, which was soon destroyed. The centre column then advanced, and the Pass was traversed in security.*

A rear-guard is usually formed, to protect the rear of the detachment, and warn it of any appearance of the enemy, who, by a stratagem often made use of, might have allowed part of it to pass. In such a case, it should immediately front the enemy, so as to give the main body time to place itself in a state of defence. The rear-guard also obliges all stragglers (always numerous in a long or difficult march) to keep up, and it prevents any plundering being committed by them. On many occasions, therefore, it is requisite to give the command of the rear-guard to an officer of great firmness, who should keep in rear of all, that he may see everything that goes on, more especially when marching through a village.

---

* Kaye's Affghanistan, vol. ii.

The duty of a rear-guard during a retreat, becomes most important, as it has to repel the efforts of an enemy encouraged by success; it should endeavour to keep back the enemy by the steadiness of its fire and frequent charges, and thus give the main body time to retreat. It is evident, that, under such circumstances, it requires steady officers to command the rear-guard, and prevent a retreat from becoming a rout.

The officer commanding the detachment, is sometimes with the main body, at other times with the advance-guard; he should narrowly scrutinize the country, and determine beforehand what positions he will take up in case of attack. He should divide his men into several sections, each under a commander, to whom he gives instructions, depending on the design which the detachment is expected to fulfil. If the detachment consists of infantry and cavalry, these two services are combined so that they may mutually support each other; thus, if the operations are carried on in a flat country, the cavalry will, during the day, form the advance and rear guards. The contrary system is pursued in a night march, or, by day, in a mountainous or hilly country: but, whatever be the composition of the advance-guard, it should be preceded by a few horsemen, in order to be warned more rapidly; the rear guard should be followed, in the same manner.

In a flat country, it is usual for cavalry to march at the head of the column, as it can make use of the ground in its manœuvres; it can also rapidly charge an enemy, and give the infantry time to prepare for an attack: but, if repulsed when marching through a defile, it would be driven back upon the infantry, and throw it into confusion. On the other hand, infantry has nothing to fear, in mountainous countries, from cavalry, who can only attack it upon roads, where infantry can easily defend itself, especially if these roads are lined with hedges or ditches. If the enemy's cavalry should surprize it during a night march, it can check any further advance by a steady fire, or, by drawing up on one side of the road, take the enemy in flank, and pour a destructive fire into them, whilst the cavalry, which is protected by this infantry and which follows it, will have time to prepare for any manœuvre whatsoever.

As the nature of a country remains seldom the same during a whole day's march, flat and hilly country, woods, plains, and defiles, succeeding one another, it would be preferable that cavalry should always be placed in rear of the infantry; for, even were the detachment to be attacked in a plain, the cavalry can always rapidly reach the head of the column, and the formation of the infantry.

The troops should, if possible, be halted only on positions where, without the detachment being itself in sight, an extensive view can be obtained of the surrounding country; and the advance and rear guards should, likewise, be ordered to halt at the same time as the main body. The men are drawn up opposite to the direction which it is expected an enemy would make use of; vedettes and sentries are posted; when the horses are fed, the horsemen should remain near them, bridle in hand; part of the horses even, according to the nature of the ground and circumstances, should not be unbridled.

A halt should never, under any circumstances, be made in a defile, or at its entrance; but the detachment should continue its progress until it has emerged from the pass: for an ambushed enemy could occupy its flanks and debouch, or roll down stones and trunks of trees upon the troops. Neither, if it can be avoided, should halts be made in a village (although nothing is more usual); at least, its situation and the position of its debouchés should be such as not to favour a surprize; but even then, the commander should be sure of the good intentions of its inhabitants, or prevent their communicating with the enemy who might be in the neighbourhood. Sentries are posted at the debouches, and in the belfries of churches.

When an ambuscade is suspected, the detachment should be halted, and information taken as to the nature of the approaches to the suspected spot, or else they should be examined by two or three men; traces of men or horses will, without fail, be perceived: if these precautions cannot be taken, a volley fired at the spot will be sure to discover the ambuscade, if there be one.

It can often be perceived, by the manner of the inhabitants, and, in a country where the people are in a state of insurrection, by their insolence, that the enemy is not far off, and that an engagement is expected. Many French detachments, in Spain and Calabria, owed their safety to this observation.

If the detachment cannot avoid returning by a bridge, a ford, or any defile which it had previously made use of, and the enemy is likely to form an ambuscade at any of these places, an officer, with a few men, should be left there to guard it, and give information of the arrival of the enemy. They will then rejoin the detachment, or retire, according to circumstances and to their instructions. If a river has been crossed by means of a ferry-boat, it should be kept on that side of the river which is the least exposed, until the return of the detachment; if possible, the latter should not come back by the same road; there will then be less danger of being cut off by an enemy who may have watched its march.

The commanding officer of the detachment should pay attention to the nature of the country through which he passes, especially in mountainous and woody districts, which present different aspects, according as they are considered in such or such a direction. If he have to return by night, without a guide, and by the same road, he should cause marks to be made by means of which it may be recognized; a post, a cross, a tree, will serve as points of direction, or, if in a wood, branches may be broken. The entrance into a forest is usually difficult to find again, and if the detachment is pursued, a defeat might ensue; care should, therefore, be taken to mark it distinctly, by taking off the bark from some of the trees.

When it is necessary to procure provisions or forage, otherwise than from the magazines of the army, and, being on the march, there is a chance of being surprized, the detachment should not be allowed to enter an inhabited place: a few men, with an intelligent officer, should be sent there; the latter should address himself to the civil authorities, and make the requisition; if there is any fear of their opposing it, or giving notice to the enemy, it would be advisable to seize some of the inhabitants before the requisition is made. The detachment, in the mean time, should be on its guard; for if the enemy be in the neighbourhood, the irritated inhabitants would without fail send to warn him: as soon, therefore, as the provisions have been obtained, the troops should speedily continue their march.

When a march is a secret one, the foraging party should be sent to some isolated farm: vedettes are placed at its approaches, and very few men are sent there, and they should be strictly prevented from committing any damage, which is often no easy task. Their trusses, having been quickly made, are loaded on a cart and brought to the detachment, which, during this time, has been placed in ambuscade.

These operations, which are often dangerous, should, if possible, be made towards night-fall: they occasion much loss of time, and, if the enemy be near, there is great risk of the *foragers* being cut off.

If there is no surprize to be apprehended, the whole detachment enters a town or village, after being assured by a patrol that there is no enemy there. Vedettes are placed at all the principal debouches; a requisition is made to the authorities, who, accompanied by a few horsemen, take from the bakers, butchers, &c., the necessary provisions.

If the troops are to pass the night in the place itself, the inhabitants provision the soldiers who are billeted upon them.

During a war, there are two contingencies which often occur, and respecting which it will be useful to say a few words.

The commanding officer of a detachment arrives with his men at some place where he intends to remain the night: he has met with the enemy, who has not ventured to attack him; but he apprehends an attack the next day on starting, or, perhaps, he has been informed that a body of the enemy is posted between him and the place towards which he is marching. The strength or the composition of his detachment, or some other reason, perhaps, will not allow of his attacking the enemy, and he wishes to avoid an engagement.

In such a case, he should take every precaution, order that no man be allowed to stray from the stables or billets, and let it be publicly known that he intends to continue his march at a certain hour the next day.

When it is night, and the horses have been fed, he orders the men to mount, having secretly obtained information of some cross-road or footpath, and provides himself with a guide. He then starts, and, by a forced march, leaves the enemy far behind.

This plan should be followed, when escorting a small convoy, or when conducting young soldiers to the army; when it is desirable to avoid a defile, or when it is known that the enemy has spies among the inhabitants.

Night marches are dangerous, on account of the difficulty of making use of fire-arms, in case of an attack, or from ignorance of the strength of the enemy, and the demoralization thence resulting, insomuch that a few men, placed in ambuscade, will suffice to throw a considerable force into disorder. These disadvantages are still more serious for cavalry; notwithstanding, there are many cases when night marches are necessary in order to save a detachment: among others, we will take the following:—

A troop of cavalry is obliged to pass through a defile, in order to avoid a very circuitous route (this generally happens at the crossing of a river or of a high chain of mountains), and it is known that the enemy is ambushed in it.

If the entrance into the defile has been blocked up, so as to prevent the detachment entering, it must retrace its steps; but if the enemy has not taken this precaution, the plan to be adopted on this occasion is very simple. Setting out at nightfall, or before the dawn of day, the advance-guard is composed of the bravest men, and preceded, at two or three hundred yards, by a few men under a steady officer; the main corps follows close, being divided into sections, each section formed on the most extended front, and about fifty paces one in rear of the other. The whole detachment then gallops through the defile without returning a single shot.

Most probably the advanced guard alone will be fired at, and suffer little if any loss. This plan succeeded perfectly with an officer of the 15th French Chasseurs, who, obliged to return from Miranda through the defiles of Pancorbo, knew that there was an ambuscade of Spanish insurgents waiting for him near the branching-off of the road to Bilbao.

Whatever disposition the enemy may have adopted, it is evident that, if there is no infantry with the detachment, the passage by night is preferable to that by day. We are only speaking here of the march of a small detachment; for, if it were a considerable corps of cavalry, it might march through the defile in the day time, as part of the men, dismounting and acting as skirmishers, would clear the road.

The officer commanding the detachment, should often suppose that he is on the point of being attacked, and ask himself what plan he should adopt, were the enemy to appear suddenly: if the question is embarrassing, if he cannot immediately adopt some plan, at once prudent and honourable, he is not yet a good officer, and his detachment is much exposed; for it is most probable that, if attacked, he will lose his presence of mind.

Even when at a distance, an idea may be formed of the strength of a body of men and the direction of their march; and, though nothing positive can be said on such a subject, yet there are a few observations which may give an idea approximate to the truth.

Although no two persons have the power of vision exactly identical, it has been generally remarked, that distances can be measured by the naked eye, and, in a clear day, by the following appearances.

At 2000 yards, a single man or horse seems like a dot, and his movements cannot be distinguished.

At 1200 yards, infantry can be distinguished from cavalry, but movements cannot be made out.

At 900 yards, movements become clear.

At 750 yards, the heads of columns can now and then be distinguished from the remainder of the corps.

It is easy, with a little perseverance, to adopt certain rules sufficiently positive for measuring space. Thus, by obtaining exact information of the respective distances of several points along a road, and by examining the appearance of horsemen, carts, &c., at these several distances, the eye will gradually acquire the habit of estimating distances with considerable precision.

The strength of a body of troops is with difficulty ascertained from a distance; it can only be estimated by measuring with the eye the space occupied, and observing the breadth of the column, whether it be marching or stationary. The best way is to find out from a guide the distance between any two points of the space covered with the troops of the enemy, though, by constant practice, this can be done pretty accurately without a guide. Thus, for example, the distance from one point to another, on a road, is 500 yards, and the breadth of the road is 12 yards; this space is covered with cavalry marching by sections at open distance: from this it may be calculated that there are about forty sections, amounting to about 800 or 900 men.

When furnished with a good telescope, it is easy to reconnoitre the number of battalions, squadrons, and regiments, by the intervals which divide them, and the difference of uniform. The number of artillery carriages is easily reckoned, when it is known that they generally occupy from 12 to 15 yards.

By noticing fixed points, such as trees, houses, &c., near which troops are passing, the direction of their march can be made out; especially, if the troops present their flank to the spectator, as these objects are successively reached and passed by them.

This is a safer system than that of relying on the effect of the glittering of weapons in the sun, which can only apply to infantry and cuirassiers; besides, this would not even apply to English infantry, as the barrels of their muskets are browned.

It is well to observe, that a body of infantry, marching towards a spectator having the sun behind him, sends out towards him strong and constant rays of light; but does neither the one nor the other, when marching in an opposite direction.

The dust raised by cavalry and artillery, generally forms a thick cloud, which rises above the column; this cloud is fainter when caused by the march of infantry.

The sound caused by a heavy column, marching at night, is distinct and continued; that of a small number of men is slight and at intervals.

When an enemy's outpost endeavours to conceal its fires behind a wall, a house, &c., his position may still be guessed at, by a glimmer which spreads through the air, especially of a dark night.

In mountainous countries, great caution should be exercised in guarding against optical delusions, as well as those caused by mists: thus, two mountains, situated at a slight distance one behind the other, and having a similar inclination, when the same light falls on them, appear to form but one mass, though a broad and often deep valley exist between them.

In 1810, a French battalion, engaged with some Spanish insurgents in the mountains of Old Castille, fell into an error of this kind, which nearly proved fatal to it.

The battle of Luzzara, in 1702, affords another very remarkable optical illusion of the same nature.

The Zero is a torrent which throws itself into the river Po, but becomes dry during the hot season. The left bank is defended against its inundations, by a dyke which had a very gentle slope: the verdure of the latter was blended with that of the fields and meadows of the right bank, so that it appeared a continuation of them. The bed of the Zero could in no wise be seen. The French army, whose cavalry had carelessly reconnoitered the country, arrived and established its camp between the Po and the Zero; the tents even were pitched; when, by chance, an officer, in placing the outposts of his regiment, ascended the summit of the dyke, and discovered, at his feet, the Austrian army under the command of Prince Eugène of Savoy, ready to take them by surprize, as soon as they were thrown off their guard. Prince Eugène had perceived the error into which they had fallen; he sallied from the bed of the torrent, and immediately attacked them: but the regiments were still under arms, and, though surprized, they succeeded in driving back the Austrians.

When objects are rendered scarcely visible of an evening, and in misty weather, they appear more distant and larger than they are in reality.

The outline of retrenchments can be recognized from a distance, when the earth, freshly raised, is reflected from the darker ground around; when the sun shines upon them, the saillant parts project their shadows on the re-entering parts.

Artillery is never adventured by itself on detachments, but a strong detachment, either of cavalry or infantry, is materially strengthened by having some guns added to it. These guns should be of light calibre, and served by mounted gunners, so as to move with the greatest rapidity. The officer commanding the artillery should see that his harness is in the very best repair, that his ammunition is complete and ready for service, and that his gunners are accustomed to the greatest exactness in their duty.

On no account whatsoever should less than two guns be detached at once; and, even then, so weak a force should never be hazarded in offensive operations, and must be kept close to the main body of the detachment. In a sortie made by the garrison of the Caubul cantonments, Nov. 1841, to occupy the Beh-meru hill, one gun only was taken. The enemy making a stout resistance, the one gun, although nobly worked, and with terrible effect, soon became unserviceable, from the constant fire which it was obliged to keep up. The vent became so heated that the gunners were no longer able to serve it. The ammunition, too, became scarce, and the gun was subsequently lost.*

Artillery should always be supported on its flank, either by some natural obstacle, or by the troops extended beyond: a gun should, therefore, never be placed at the extremity of a wing, unless it is flanked in such a manner as will secure it from the risk of being taken in flank, sooner or later, by the enemy.

Every detachment of artillery should have an escort in constant attendance upon it. A hundred examples might be cited, shewing the danger to which that arm is exposed, when unprovided with an escort. During the present Caffre war, an artillery officer nearly lost his gun, through being detached without an escort.

---

* La Petite Guerre, par Col. C. Decker. Kaye's Affghanistan, vol. ii.

In petty warfare, artillery should almost always be looked upon as forming the reserve, and, consequently, it will be made use of more frequently in the defensive than on the offensive, and this should be taken into consideration when placing it in position.

As difficulty will often arise respecting the passage of artillery across streams, the bridges of which may either be broken down, or be too narrow for the carriages, the following expedients may be resorted to:—

There being sufficient means to convey the men and ammunition across, and the horses being swam over, the gun carriages and waggons may be dragged through the bottom of the river by their horses, if yoked by strong ropes to the carriages. If the bottom of the river is soft, the sinking of the wheels, in crossing, may be partly prevented by attaching casks, air-tight cases, or other buoyant bodies, to the carriages.

Another method* is to sling the carriage to blocks running upon cables stretched across from bank to bank. If the horses be crossed first, they may be yoked to ropes attached to the blocks, and haul the carriages over, the blocks being drawn back by the men léft on the near side.

---

* Sir H. Douglas, Mil. Bridg.

CHAPTER IV.

ON ENGAGEMENTS OF DETACHMENTS.

A DETACHMENT should, if possible, never engage in a combat, without having first reconnoitered the enemy; to act otherwise would be imprudent; yet, to retreat at the simple appearance of the enemy, before having made this reconnoissance, would betray either incompetence or intimidation. An officer should, therefore, never allow his men to be approached by a body of the enemy's cavalry, whose strength he is ignorant of. When a corps of this service is seen debouching from a defile, though at a distance, the greatest precaution should be taken. The proximity of infantry does not present so much danger.

As hesitation is at all times dangerous in warfare, and as it frequently happens that an opportunity presents itself once which will never occur again, a determination should be promptly come to.

If an attack is decided on, it should be vigorous; if, on the other hand, an officer considers that, either in consequence of the moral state of his men, or (if the detachment consists of cavalry) the weakness of his horses, it would be more prudent to decline an engagement, he should retire, or, according to circumstances, observe the enemy and wait for a support; to act otherwise would most likely involve the destruction of the whole detachment.

Stratagem is preferable to open force, not only because it *may* supply the place of numbers, but also, because the enemy can be injured before he is able to defend himself. Measures should, accordingly, be taken to surprize an enemy, every time that circumstances or the nature of the country will allow of its being done.

As the sudden appearance of a reserve is very apt to throw an enemy into confusion, care should be taken to form one of a fourth or third part of the detachment; and, if possible, it should be concealed until the moment when it will be required.

Here a question presents itself, which may offer some difficulty.

A detachment of cavalry, supported by a corps of infantry, is on the point of engaging the enemy; in such a case, should it form a reserve? for it would seem that, if repulsed, it could safely rally behind the infantry, whilst the formation of a reserve, depriving it of part of its force, would place it at a decided disadvantage. Still, it is more prudent to form a reserve, every time that the strength of the detachment will permit of this being done: more especially, when the nature of the ground obstructs the view of what is going on in the rear or on a flank of the enemy, as the latter can, under these circumstances, make use of a reserve without its being perceived.

On the 13th Sept., 1810, Marshal Mortier attacked a corps under the command of the Marquis de la Romana, at Fuente de Cantos in Estremadura: the engagement was spirited and the victory disputed for some time; the Marshal turned the right wing of the enemy with some infantry and two regiments of cavalry under General Briche; this manœuvre succeeded, the Spaniards gave way, and the French cavalry dispersed in pursuit of the vanquished. Suddenly, nine Portuguese squadrons, which had been concealed by rising ground, advanced in column, against the French infantry, on the road to Seville: but a troop of hussars had been kept in reserve near the Marshal, which boldly charged the head of the column, and drove it back. Had the Portuguese commander known how to manœuvre his men, he would have remained satisfied with keeping back the French infantry with a few deployed squadrons who would have surrounded this troop of hussars, and would have sent the remainder against the French cavalry, who would thus have suffered considerable loss, from the great difficulty of restoring immediate order to the latter corps.

If a body of cavalry has to debouch from a defile in order to attack the enemy, it should execute this movement at a gallop or fast trot; the several sections should form as they debouch, and the charge be made without loss of time: the reserve, stationed at the entrance of the defile, or a little in front of it, would protect the troops, in case they were driven back, and then form the rear-guard. It might even be posted in the defile itself, if this afforded ground convenient for taking in flank an enemy pursuing imprudently. The position to be occupied by the reserve depends, however, on circumstances which may influence the moral courage of the troops.

After the battle of Fère-Champenoise, the French army, retreating towards Sezanne, had to go through a succession of hollow roads. When near the latter town, the flankers came upon the enemy's vedettes. General Belliard, commanding the cavalry of the advanced guard, desirous of preventing any hesitation in the march of the column which was then engaged in a hollow road, at once charged the enemy and drove it back, keeping it in check, till the infantry had passed through the defile.*

There is one circumstance which almost always prevents any manœuvring, that is, when, through the negligence either of the advanced guard or the flankers, a detachment is suddenly attacked by a body of cavalry. If the latter attacks the head of the detachment, its commander should bravely charge with his first section, and be followed by the remainder;

---

* Hist. des Campagnes de 1814 et 1815, en France; par le Général *G. de Vaudoncourt*, liv. v. c. 5.

the officer commanding the rear section, if he understands his duty, will not wait for orders which cannot be sent to him, but he will endeavour to leave the column and gain his adversary's flank. It is evident that, if the enemy makes this attack in a defile, with a numerous cavalry, he will not be able to turn his superiority to advantage by surrounding the detachment: if, therefore, the officer commanding the latter charges without hesitation, he will most probably throw the attacking force into confusion, and obtain the necessary time and space to disengage his men. If, on the contrary, he were to retreat, his detachment would most likely be destroyed; for the enemy would reach him in a moment, and take both men and horses.

In June, 1810, the British cavalry belonging to General Crawford's division, being obliged to retire from Gallegos to Alameda, left a troop of English and one of German cavalry and two guns to cover the movement. This rear-guard drew up on a hill at half-cannon-shot from a streamlet with marshy banks, which crossed the road to Alameda; in a few moments, a column of French horsemen came on at a charging pace, diminishing its front as it approached the bridge, but resolute to pass, and preserving the most perfect order. Captain Kraüchenberg, commanding the German hussars, proposed to charge, but the English officer did not consider himself warranted in so doing. The German at once charged with his single troop, overthrew the front ranks, and drove the whole back.*

If a detachment is attacked in flank, its position becomes critical; however, on reflection, it will be seen that this can seldom take place of a sudden, except in a defile, where the enemy, debouching by a road which crosses that occupied by the detachment, will divide the latter into two portions; but that one which sees the enemy before it, has as much advantage in engaging as the enemy has; and, if the officer commanding one of its subdivisions, preserves his presence of mind, he will save the detachment. Besides, if the defile is of some breadth, the rear sections, charging in line, would take the enemy in flank as he debouches, and thereby greatly endanger his position. With respect to being attacked in flank, in an open country, the simple movement of forming line to the right or left, will enable the detachment to defend itself.

---

* Nap. Pen. War, vol. iii.

If, after the enemy has been reconnoitered, it is proposed to attack him, notwithstanding his superiority in numbers, the detachment should slowly retire before being perceived, and place itself in ambush. But if it has been discovered, and this manœuvre is impracticable, part of the detachment should be sent off with orders to place itself in ambush, whilst the remainder, by feigning retreat, induces the enemy to pursue. A few shots are exchanged with the leading horsemen, and then the men take to flight. The enemy is thus brought on towards the ambuscade, and then attacked on all sides. This stratagem, which has often been tried, almost invariably succeeds: but to have recourse to it, a woody country is required, or, the officer commanding the detachment should have observed places, along the road, adapted for an ambuscade.

As this manœuvre cannot always take place, there is another which a well-mounted detachment can make use of. Keeping itself at some distance from the enemy, a few men should be detached to harass him with the fire of their carbines; if the enemy attempts to return the fire, or charge the sharp-shooters, his march will be delayed and become disorderly; this is the moment for the detachment to charge. In a country which presents, alternately, clumps of trees, cultivated fields, and hills, the enemy can be menaced, sometimes upon one point, sometimes upon another, and thus be continually harassed. If this creates any confusion, or any irresolution is shewn by the enemy, he should be immediately attacked, both in front and in rear, without being allowed time to manœuvre; or he *may* be allowed to begin a charge, the detachment retiring slowly in steady order, and, as soon as the enemy's line becomes disunited, it should be suddenly attacked. But to adopt such a course requires well-mounted and well-disciplined soldiers.

These measures will be found very useful to an officer who may be sent, in partizan, on the communications of the enemy's army, with orders to do all the mischief in his power, and not to allow any feeble detachment to pass without being harassed or attacked. New levies joining their corps, those marching battalions or squadrons composed of soldiers belonging to every branch of the service and to every regiment, commanded by officers whom they do not know, usually fall an easy prey to a well-disciplined cavalry.

A troop of cavalry, harassed on its march, and wishing to avoid an engagement, should send out a few skirmishers to drive back those of the enemy; but they should not go to any distance from the main body. The troop itself should be formed on the largest possible front, and march at a fast pace, which will soon place it out of the enemy's reach, as the latter, endeavouring to keep alongside of it, either through fields or cross roads, will not be able to move so fast.

If a success has been obtained, the vanquished should not be too hotly pursued; it will suffice to have them followed by a few horsemen to prevent their rallying, whilst the remainder are again brought to the charge. No prisoner should be made, as long as any resistance is offered; but the enemy should be sabred until they have laid down their arms: it is then the duty of the reserve to take charge of the prisoners, whilst the remainder of the detachment pursue the fugitives. It is difficult, on such occasions, to enforce discipline among the soldiers, as they make prisoners and desist from the fight in order to search them, which often allows the enemy to rally.

An attack made upon a body of infantry is based on the same principles; uneven ground should be avoided, as it favours the defence of the enemy. For the same reason, a body of infantry, when menaced by cavalry, should endeavour to occupy ground which would be dangerous, or, perhaps, impracticable, for cavalry.

A detachment composed of both infantry and cavalry, encountering an enemy in a defile, should post its infantry on the sides, so as to fire at the enemy in flank, whilst the cavalry charges in front. Infantry is likewise posted on ploughed or broken land, whilst the cavalry is drawn up near it, though in rear of the point where the enemy could turn it.

The British army marching on to Toulouse, 1814, did so on both banks of the Ers. It was therefore necessary, in order to keep up the communication between the columns, that one of the bridges should be secured. The 18th hussars, after some skirmishing with Vial's dragoons, at the bridge of Croix d'Orade, were suddenly menaced by a cavalry regiment in front of the bridge, the opposite bank being lined with dismounted carbineers. Some infantry having come up to the support of the 18th, it charged the regiment opposed to it, and pursued it beyond the village of Croix d'Orade, where it rallied on the rest of the brigade. The hussars then recrossed the bridge, which was defended by the British infantry, whose fire stopped the French cavalry, and the communication between the allied columns was thus secured.*

A detachment which precedes the advance-guard of a corps marching to attack the enemy, should keep close to it, that the enemy may not be warned too soon. And, although the commanding officer should have the front and flanks well searched, he should not expose his flankers to be cut off; neither should he charge the reconnoitering parties of the enemy, unless they have approached very close, especially at night.

After a successful engagement, the officer commanding the head of an advance-guard, should not pursue the enemy, in a broken country, except with the greatest precaution; and, though he should endeavour not to lose sight of his adversary, the front and flanks should be well searched.

---

* Nap. Pen. War, vol. vi.

If he cannot keep the enemy in sight, and the country is difficult to search, the detachment will be the more cautious in its march; more especially, when preceding engagements have taught them the valour of the enemy. Yet nothing is more usual than to be surprized on such occasions. The advice, dictated by prudence, is despised, because it is set down to timidity; and, because rashness has sometimes succeeded, the march is continued as though the enemy that is no longer in sight were no longer to be feared. In 1808, General Lefebvre-Desnouettes, having crossed the Esla by means of a ford, near Benevente, whilst pursuing the British rear-guard, was driven back by a superior force which he had not perceived, and he himself, with several of his horsemen, were made prisoners.

Another example was given by the Baron de Frimont, who, with a division of Austrian cavalry, while following up the retreat of the French cavalry under General Milhaud, 6th January, 1814, advanced, in a careless manner, without having the country in front of him properly reconnoitered: he was attacked, between Colmar and Sainte-Croix, by the French dragoons, and repulsed with a loss of four hundred men.

An officer commanding an advance guard, should endeavour to discover the heads of the enemy's columns, because, if the latter intend to lay an ambuscade, it is usually done by the head of a column, whilst the rear continues its march as if nothing was going on. If the nature of the country, along the road, is such as to prevent this reconnoissance being made, the officer will do wisely in endeavouring to reach some more favourable point. Another reason for his adopting his course, is, that, in a hurried retreat, the enemy's columns may cross one another, lose their direction, or meet with some obstacles;

in such a case, one of them must be delayed: this opportunity should not be lost, and the officer at the head of the advance guard, should immediately inform his commanding officer.

An army retreating after a defeat, across a broken country, will almost infallibly have some of its corps losing their way during the night: a general of cavalry can then send detachments, who will be sure to make many prisoners. This happened to the Austrians, after the battle of Eckmühl.

Under such circumstances, too, an officer who keeps his presence of mind, can extricate himself, especially during the night, where his numerical inferiority cannot be perceived, and where all the advantage is usually on the side of the most resolute.

After the engagement of Wertingen, in 1805, the commandant Wilhems, of the French 29th dragoons, having lost his way during the night with a single horseman, suddenly came into the midst of an isolated Austrian company of infantry: he immediately gave a few words of command, as if he had many men with him, and charged these intimidated soldiers, who surrendered themselves prisoners.

If the advance-guard comes up with the enemy, at the passage of a river, where they are endeavouring to destroy the bridge, it should at once charge the troops protecting the workmen. But if the bridge has been destroyed, officers and intelligent non-commissioned officers should immediately be sent in every direction, to find out, either from the inhabitants or by personal observation, where the nearest ford is situated, or what boats can be obtained.

The retreat of the British forces, after the first siege of Burgos, affords many examples of the advantage of a spirited pursuit on such occasions, either to prevent the bridges being destroyed, or to take advantage of fords which the enemy has not had time to break up.

The officer commanding an advance-guard, when marching through a town, should seize all the papers at the post-office, stop all public carriages and carriers going towards the enemy, and question the inhabitants as to the direction taken by the enemy, and the magazines which may have been left in rear; he should, likewise, procure guides for his own division, and for those which follow.

Marshal Ney, on being detached from the grand army, after the battle of Lützen, crossed the Elbe at Torgau, intending to march upon Berlin. One of his reconnoitering patrols having stopped the Breslau post, he learnt, by means of a newspaper, that a corps of 20,000 Russians had crossed through that town on their way to Bautzen, to reinforce the allies. General Jomini, Ney's *Chef d'Etat-Major*, having shewn him how useless his march upon Berlin had now become, he turned towards Baretzen to join Napoleon. It is to be remarked, that there is hardly a town of any importance, in Germany or England, which does not possess a local newspaper by means of which much useful information is often obtained.

Although, in a pursuit, it is very necessary to observe certain precautions, any thing like timidity should be avoided; for, an officer, pursuing an enemy discouraged by any great disaster, may attempt what, at another time, might appear imprudent. Thus, the French General Richepanse, pursuing the rear guard of the Austrians after the battle of Hohenlinden, came up to it at Wocklabrück, on the road from Munich to Vienna: he there took 300 men and a general officer prisoners. The enemy, hoping to keep him in check, left three battalions in a wood which was crossed by the road, so as to take him in flank, if he attempted to march through it. Richepanse, who knew he was supported by the main body of his advance-guard, galloped through the defile with his men, and attacked the retreating enemy: he sustained no loss from the fire of the three battalions, and they, not being able to disengage themselves, were taken prisoners.

Detachments forming the extreme rear-guard of a column, should march on with rapidity while skirmishing, and, from time to time, charge the enemy's skirmishers, to check their advance. They thus afford time to the main body of the rear-guard to gain ground.

If a retreat is made immediately after an engagement, such detachments should be formed of troops which have suffered the least. It requires peculiar talent to command these detachments, which are always greatly exposed; an officer must be able to make use of any obstacle by which the enemy's advance may be checked; and, not only should he examine the movements of the latter, but he must be able to take instant advantage of those by which a column might be cut off.

An officer should not hesitate, in certain cases, such as at the debouch of a defile, to make part of his cavalry dismount, in order to facilitate the march of the troops in front of him, which may have been delayed by any one of those obstacles so common in retreats. It requires a great deal of coolness, in such critical moments, to prevent their being taken advantage of by the enemy; the entrance into the defile should, if possible, be blocked up with carts, empty casks, ladders, &c., which may be obtained from any dwellings near at hand. The horses of the men who defend the barricade with their carbines, are placed in rear: as soon as these can possibly retire, they rapidly mount and march on; whilst the remainder, who have been left on horseback, advance towards the opening of the defile, fire a volley to facilitate this operation, and then join the others at a gallop. If infantry has been left to support the cavalry, on such an occasion, the latter remain on horseback during the firing, then allow the infantry to get in front of them, and protect their retreat.

Though every branch of the service should mutually support each other, yet, in retreats, there are circumstances which oblige the cavalry to separate from the infantry, in order to insure its own safety. Infantry, being unable to move so rapidly, would, unless in a woody or mountainous country, cause the destruction of both, if the cavalry did not forsake it, when attacked by a superior cavalry likewise supported by infantry.

On the 30th August, 1813, Vandamme's *corps d'armée* being surrounded and overpowered, near Culm, by the united forces of the Austro-Russians and Prussians, the brigade of light cavalry, commanded by General Corbineau, boldly broke through the enemy, and sabred the troops of Kleist, who occupied the road to Nollendorf, his only line of retreat. He threw the Prussian artillery into a complete confusion, and enabled a portion of the French infantry to regain the mountains and join the main army. This vigorous action, one of the most remarkable of the campaign of 1813, might serve as an example to every cavalry officer. It may be added, that a feeble detachment of cavalry has sometimes been saved, by taking refuge within an infantry square.

The commander of the rear detachment of the rear guard protects the destruction of every means of passage across a river, and should, accordingly, take up his position in front of the bridge to be destroyed. If he has not time to destroy (or take to the other bank) all the boats and barges, he should turn them adrift; but if that object can be accomplished without effectual obstruction, he should have a careful search made for even the smallest punt, and have it destroyed.

When the enemy does not follow up the pursuit vigorously, no means should be neglected to deceive him as to the direction taken by the retreating column. The stragglers are made to rejoin the main body, the wounded are placed upon requisition carts, and are carried off. Such was the movement of Barclay de Tolly, 27th July, 1812, near Witepsk.

The greatest vigilance is enjoined upon the detachments of the advance or rear guards, whether in pursuing the enemy, or in a retreat. Their horses should seldom be unsaddled, and then only when there is nothing to be apprehended. They should never be stabled but in very bad weather; the stables of a roadside inn, or solitary farm house, being preferred to those of a town or village, for the greater convenience of watching what is going on around, as, also, because there the soldier cannot stray to any distance—a circumstance carefully to be guarded against.

An army making a flank march, sends detachments between it and the enemy, to cover this movement. These detachments, that they may be able to warn the main body of any enterprize he may undertake, should not lose sight of the enemy, as it is probable that, if he has the least suspicion of such a march, he will send reconnoitering parties to find out its direction. Great vigilance, therefore, is required; all communication between the inhabitants and the enemy must be prevented; the smallest patrols attempting to approach, must be driven back, and the detachment must be kept united and concealed, to prevent its being discovered and cut off; for the enemy will endeavour to make prisoners in order to obtain information.

A flank march, being almost always dangerous, requires great precautions during its execution; and is, therefore, usually made by night. The army follows the valleys, whilst the troops which flank it march along the heights overlooking them; or else, the army follows the latter, whilst the flankers keep along the base, extending themselves into the plains.

A detachment marching on the flank of an enemy who is himself making a flank march, should avoid being perceived or skirmishing with the troops which are sent against them; but merely occupy them, and thus enable the army to change the direction of its march unperceived: this movement is attended with most hazard towards dusk, as the army might then be thrown into great uncertainty. A detachment which is entrusted with this service should be provided with excellent *guides*, for it may have to follow cross roads where it might lose itself. In an expedition of this nature, an active officer will make many prisoners; for, on a march, there are always stragglers, who remain behind in the public houses, or rove about trying to pillage.

An officer who has been cut off with a few men by the enemy, should rapidly reconnoitre his adversaries, and, if he can find out a weak point, he will by a bold charge most likely effect his escape; this course, which at first may appear rash, is only bold; for a troop, although surrounded, may always hope to overthrow whatever may be opposed to it. Infantry surrounded by a numerous cavalry, has less chance of escape; but troops of every branch of the service should at least attempt it.

By putting into practice the rules which have been here detailed, many officers on detached service have acquired an imperishable fame: and have proved that boldness, united with reflection, is capable of extricating men from the most perilous positions.

CHAPTER V.

SURPRIZES AND PARTIZANS.

An enemy is taken by surprize, when he is attacked before he has had time to form any defensive disposition. An operation of this nature may be effected, either by laying an ambuscade, or by a rapid movement taking the enemy in rear; but, in either case, an accurate knowledge of the country is absolutely requisite.

When, after calculating all the chances of an enterprize of this nature, it is found that the risk incurred will be but small compared to the extent of the injury which may be inflicted upon the enemy, the problem which every military operation presents has been solved, and the rules of prudence will not be deviated from by undertaking it.

That success may be ensured to an ambuscade, the detachment destined for this service must consist of men in whom confidence can be placed, and the officer commanding them should well understand his duty: it is one of those difficult enterprizes which require great boldness and a prompt resolution, as unforeseen events may occur at the moment of its execution; and he should always be prepared for such. If, therefore, the officer commanding the detachment should lose his presence of mind, serious disaster might ensue. With respect to surprizes effected by a rapid march, though they do not require less capability in the commanding officer, yet, as less secrecy is required, the choice of soldiers is less *important.*

A surprize may have different objects in view: to cut off an out-post, a convoy, a cantonment, a courier, an important personage; or to attack troops on the march. It may also be necessary to lay an ambuscade for a reconnoissance. But, in every case, the precautions required to be taken are almost always the same; it being requisite to keep the enemy in ignorance of the approach of the detachment, and to attack him suddenly.

The outposts and patrols of an army can usually give useful information, of which advantage may be taken to effect a surprize; more can generally be obtained from spies and deserters, as to the march of a convoy or a detachment, whether the enemy is negligent in placing his outposts, the positions occupied by these, and of what troops they consist, &c.; it is also through such individuals that the character and conduct of the officer commanding the enemy is discovered—a point, the knowledge of which, in warfare, frequently proves of essential importance.

Night is usually the most favourable time for reaching the spot where the men are to ambush; but, even then, precautions, which might otherwise appear unnecessary, are often indispensable, either on account of the importance of the object proposed, the nature of the country, or the proximity of the enemy. Horses, therefore, which cough or neigh should not be taken. In many cases, stony or hard roads, which occasion a clatter from the horses' hoofs, should be avoided; and the scabbards should be bound round with hay or straw. Some officers, when required to surprize an outpost, have bound coarse canvas round the horses' hoofs; but this expedient is only adapted for short distances.

If the detachment is setting out from a cantonment, care should be taken to prevent any of the inhabitants becoming aware of its destination: the best way, perhaps, is to take a false direction at starting, and then come back into the right one by a circuitous route; or it may be publicly given out that the detachment is to march to some other place for an imaginary purpose, and preparations are made accordingly, it being impossible, in many cases, to prevent some spy from escaping and warning the enemy, although sentries may be placed at the several debouches.

The detachment should march by the least frequented roads, to reach the place where it is to ambush before daylight; for, at whatever time the surprize is intended to take place, it is very necessary to be ambushed before having been perceived by any of the inhabitants, or before the enemy has sent out his patrols. If possible, the detachment should reach the place appointed, by a direction perpendicular to that in which the enemy is expected, so that its track may not be observed.

There are certain countries, intersected with defiles or streams, where a detachment is under the necessity of following for some time a road which would be precisely the one by which the enemy would have to proceed: this is an inconvenience which, in many cases, cannot be avoided; for instance, when passing a bridge, a ford, or certain mountain defiles. In such a case, if foot-marks are left on the ground, the commanding officer should order part of the men to continue their march, forming a front of equal extent to that which was formed by the whole detachment, whilst the remainder ambush themselves. The detached party marches for half an hour, more or less, and then rejoins the main body by some by-path; or it might return by the same road, which would induce the enemy to suppose that a patrol or reconnoitering party had been in that direction.

It is evident that this measure is but a palliative against a serious inconvenience; for, whatever may be done, the enemy must become aware that a body of men have lately passed along that road, and will endeavour to discover where they came from, and in what direction they have proceeded. It would, therefore, be necessary, for this movement not to be perceived, that the detachment should leave the road by which it is proceeding, and reach another parallel to it; or march across the country until it came to some convenient spot, at a sufficient distance from the point where it left the former road, in order to be enabled to attack the enemy before his advanced guard reached that point and noticed the track. As this measure can generally be taken, it should be preferred.

The detachment being halted at some distance from the place which is considered suitable for an ambush, the commanding officer, with one or two trustworthy men, examines the localities, and, when he has found one to answer his purpose, he sends for the main body. This locality should be spacious enough to contain the detachment in a convenient manner, at such a distance from the communications that there may be no fear of its being searched by the enemy's patrols, or discovered by the inhabitants, and sufficiently sheltered to prevent the men being seen from a distance. It should possess at least two debouches, that, in any case, a retreat may be secured; and the communication with the point where the enemy is to be attacked should be good, that the charge may be sudden.

Infantry may be concealed by standing corn, ditches, hedges, or rocks; but cavalry must choose its position with great caution, and the best localities for a cavalry ambuscade are winding valleys which debouch on to a high road; woods from whence a sally can be made in several directions; broad ravines but slightly scarped; high walls and court-yards with double debouches, and isolated farm houses, are also very convenient for this purpose.

A village can seldom be occupied if the enemy is not expected for some hours; as one of the inhabitants can easily escape and carry him warning. This will not, however, refer to villages situated in a defile, or when the inhabitants favour the enterprize.

The most convenient places to attack an enemy are those where the latter can use only part of his forces at a time, or where the columns must be formed very deep, and cannot deploy. Defiles, horse-ponds, or fords, where the horses are taken to drink, and halting places, where the drivers fall asleep or stray away, present facilities for the attack of a convoy: a wood, at the back of rising ground, or localities where public fairs are held, present opportunities for the attack of a cantonment; as likewise does the neighbourhood of a village, for the attack of a detachment which may have halted to obtain refreshments, or for the purpose of cutting off plunderers who have strayed into the orchards, fields, &c.

As soon as the detachment is placed in ambush, sentries or vedettes should be posted, and sheltered from view. If the ambuscade is in a wood, the sentries are placed at the outskirts, or even some men are made to climb up the trees. If behind a hill, the sentry should be so placed that his head alone may be above the summit. In any case, the sentries should be doubled; that one of them may give information of what is going on, and take to the commanding officer any individual who may be stopped.

The detachment having been divided into several sections, according to the object intended, a commander is given to each, who receives instructions as to what he is to do in such or such a case; these instructions should be concise, and, as every event cannot be foreseen, he should be required to reconnoitre the ground upon which the attack is to be made.

In some cases, no fires should be lighted, or even smoking allowed; silence should likewise be carefully observed: no person should be permitted to stray away, and at least one half of the detachment should always be under arms.

As it is of importance to ascertain the manner in which the enemy reconnoitres his flanks when on the march, and the discipline of his men, some intelligent soldier is disguised as an inhabitant of the country, and sent to watch the enemy, which he can easily do by stationing himself near the road, and affecting to be employed in agricultural labour.

On the approach of the enemy, the sentries should immediately retire, and the detachment takes care to surround him without noise, or else retreats, and takes up another ambuscade. This precaution should always be observed if any soldier deserts.

A detachment, retreating before an enemy emboldened by success, who pursues it without reconnoitering the country, or being supported, may, by a well-timed ambuscade, check the pursuit.

It is evident that the portion of the detachment which should form the ambush ought to be that farthest from the enemy; whilst those in rear skirmish with him, and, by a feigned flight, induce him to follow. As the rear guard of a corps usually consists of cavalry, and as, in hilly countries, it is generally supported with a few companies of infantry, the ambuscade should be formed from both services, that they may afford each other a mutual assistance.

The infantry places itself at the nearest available point to the road followed by the enemy, so as to cause him as much loss as possible in one volley; but the disadvantage of this enterprize is, that the timidity of a single man will suffice to cause its failure, for a coward, or a raw recruit, will fire at the enemy when he is at a distance, from fear of seeing him too near. On such occasions, therefore, the infantry should be made to order arms, and be well watched; the commanding officer alone should observe the enemy, and allow him to advance; the volley should be directed, not at the head of the column, but at its rear, as it will thus occasion much more disorder. As soon as the volley has been fired, the cavalry should leave its ambuscade at a gallop, and sabre the remainder.

The French army, having crossed the Adour, in 1814, fell back upon Aira by the road of Granada: two companies of infantry and a troop of cavalry formed the extreme rear guard, and it was determined to lay an ambuscade for the English cavalry, which was advancing with confidence. The infantry was placed along the sides of the road, whilst the cavalry continued to skirmish; the English gave into the snare, when some of the infantry fired before receiving any order to do so, and the whole project failed.

Generally speaking, therefore, cavalry is better adapted for this kind of ambuscade; and if well led, and in sufficient number, it will obtain a success to which infantry cannot pretend, as, from the rapidity of its attack, it will throw the enemy into confusion before he can be aware of the number opposed to him.

The neglect of the slightest precaution may occasion the failure of a project based upon the success of an ambuscade; and it is clear that, though the expedition may have been well planned, a thousand causes, independent of the detachment or of the commanding officer, may prevent its success: but this is not the case with surprizes depending on the rapidity of a march from a distant point; distance induces the enemy to be less on his guard, and, if the nature of the country is favourable, he may always be attacked before he is fully prepared.

When, to ensure the success of such an enterprize, it is considered right to divide the detachment into two parts, it is dangerous for one of them to march in advance of the other, or to take different roads; in fact, whatever calculation be made with respect to this, many causes might delay the march of one of the divisions, and prevent it reaching its destination at the hour appointed. It is especially during a night march, that this inconvenience would be sensibly felt; the guides might lose their way, or escape, the roads may be bad, a ford broken up, one of the enemy's patrols may obtain information of the march; then everything fails. It is far more prudent for the detachment to keep united, and only divide when near the point of attack: besides, commanding officers will thereby be able to act according to circumstances.

The best time for surprizing troops who are not on their *guard*, is just before daybreak: rainy and foggy weather, and, in southern climates, the heat of the day, likewise afford favourable opportunities.

The time necessary for the march should be calculated according to the nature of the country and of the roads, so that the place may be reached at the time appointed. If the enemy's patrols or reconnoitering parties do not perceive the detachment, no notice should be taken of them; but if they do, they should immediately be charged, that the detachment may reach the main body of the enemy as soon as they. To avoid being seen, the advance-guard should precede the column at a very short distance, and the flankers be ordered to keep close to the road, and to retire as soon as they perceive any of the enemy's patrols.

It is better not to attack an outpost or a cantonment, until the enemy's patrols and reconnoitering parties have returned; as troops are generally under arms during their absence. After their return, the troops, thinking there is nothing to fear, generally allow themselves some repose; and if attacked at that moment, they will most likely be surprized whilst cleaning their horses, drawing their rations, &c.

As the reasons for which a surprize has been attempted may have changed before it can be put into execution, it is sometimes necessary to come quickly to a decision, according to the information which has been received; for the enemy may have suddenly taken precautionary measures, such as erecting a barricade, sending out extra patrols; or it may have received reinforcements of cavalry or infantry; a spy may have given information, and the detachment might thus fall into the snare which it had been preparing for others.

A reason of this kind, independent of any other, is a sufficient inducement to form a reserve.

If a detachment is to be some days in the neighbourhood of the enemy, the way in which his troops do their duty should be accurately known; whether they are vigilant, the sentries and vedettes well placed, the patrols frequent, &c.

A surprize is difficult, when attempted against a watchful enemy; but, if he shews any negligence, every success may be expected.

If it is intended to surprize an outpost, which is supported in rear by a detachment too strong to be attacked, the position of the post, and the roads which lead to it, should be well known, so as to ensure one for retreat, different from that made use of for the attack. The attacking force is then divided into two parties, one to attack, the other to observe: the latter should be ambushed, and receive its instructions; the former then charges at a gallop, cuts off the outpost, and rapidly returns. If the enemy has laid an ambuscade, or if his troops of support present themselves, the detachment placed in observation should advance with a loud shout, and charge.

Certain localities allow of prisoners being made in the following manner:—It having become known that the enemy sends out a reconnoitering party every morning, an ambuscade is laid, a little before day-break, close to the road which it usually takes, and, as soon as it returns, the ambushed party suddenly attacks the outpost.

To surprize a post with greater certainty, it should be turned, as there is usually but little precaution taken in rear.

When a detachment on the march is to be surprized, it should be decided which part is to be attacked; and upon this point nothing very positive can be said.

Generally speaking, there is much less risk in attacking a rear guard, than the main body or the advance guard, especially when the nature of the country would make it difficult for the enemy to support his rear guard; which would be the case, when the main body is in a defile, and the rear guard has not yet entered it. It is natural for troops attacked in rear to be very uneasy, as they are ignorant of the force brought against them: if the defile is narrow, the *men* will soon be thrown into confusion, for some will endeavour to get back, others to push forward, and the commanding officer is very likely to lose his presence of mind.

If it is decided to attack the main body, the detachment should keep at such a distance that the skirmishers of the advance guard may perceive nothing, and the place of attack should be such that the main body cannot easily receive assistance from its advance or rear guards; besides, these should be kept occupied by skirmishers, if not more seriously. By this means, their commanders, being ignorant of the number of the enemy, will endeavour to reach some open country, and leave the main body to its own defence.

An advance guard usually reconnoitres its way; and, unless from its numerical weakness, or from having imprudently pushed forward to too great a distance from the main body, it will be difficult to surprize, or will be easily supported.

All such attacks should be made with the greatest decision. An officer, or an intelligent non-commissioned officer, follows the movements of the enemy, and fixes upon a favourable spot for an attack: the ground having been reconnoitered beforehand, and every precautionary measure taken, the attack is made upon several points at once; the enemy becomes separated into several portions, which are each surrounded; no prisoners are made until the affair is over, and they are then quickly carried off. The reserve supports the attack at the point where the greatest resistance is offered, and afterwards forms the rear guard.

These operations are very easy when the war is carried on in the country to which the attacking party belong, as it is then unnecessary to expose the soldiers, in various disguises, in order to obtain information respecting the enemy; for the inhabitants favour these enterprizes: but, in foreign countries, a surprize following a rapid march, should be preferred to an ambuscade.

The campaign of 1815 presents a remarkable instance of the surprize of an advance guard of cavalry advancing carelessly.

The French army, after the battle of Waterloo, was united near Paris; the Prussians, having crossed the Seine at Pecq, near St. Germains, intended to attack the French upon the left bank of that river, whilst the English kept them in check before St. Denis. On the night of the 30th June, Lieut.-Col. de Sohr, with his brigade, consisting of the hussars of Pomerania and Brandenburg, was detached to reconnoitre the country about Versailles, and reach the road to Orleans, so as to alarm the French with respect to their communications.*

General Excelmans, cantoned at Montrouge, was to participate in the movement ordered against Blucher; but, whether he had received a counter-order, or that he did not care about obeying, he marched, on the first of July, upon Versailles, through Velisy, with four regiments of cavalry, and directed General Piré upon Rocquencourt, through Ville-d'Avray, with orders to ambush upon the road from Versailles to St. Germains, and cut off the retreat of the enemy.

Colonel de Sohr, having left Versailles with the information that General Thielmann would occupy that town with his infantry, advanced at a fast trot and very carelessly, upon the road to Montrouge, without having his road reconnoitered, as if the French army did not exist. Suddenly, his column met that of General Excelmans, at the junction of the road from Bièvre to Versailles, near the wood of Verrières. The Prussians were driven back into the park of Versailles, the French pursued, but the gates were shut upon them; De Sohr, unable to obtain any of the troops which were to support him, although it was very late, decided to retreat upon St. Germains. But General Piré had reached his place of ambuscade, and taken up his position; the cavalry opposed the retreat of the Prussians, whilst the infantry fired upon them at point-blank range; they managed to disengage themselves, turned to their right, and reached the village of Chenaye, but the

---

* Wagner, Battailles des Prussiens, 1813-14-15.

French infantry had preceded them, and occupied the flank of the defile. The cavalry defended every debouch, and the Prussians, 1000 strong, with their leader, who was badly wounded, had to surrender.

Although this surprize was executed by a considerable force, it is a good example to follow, as all its combinations were very simple. It should be remarked, that—1st. The roads followed by the two French columns were good; 2nd. That the country, although much populated, was favourable for concealed marches or ambuscades, on account of the number of small woods, walls, and country houses which cover it; 3rd. That the French were in sufficient strength not to fear meeting the head of the enemy's column, and that a country so wooded would, besides, have protected their retreat; 4th. That the spot for an ambuscade was well chosen, and that the combination of the light cavalry with the infantry secured its success, and would have overcome all resistance.

The march of the Prussian hussars was badly conceived. When it is intended to act in partizan on the rear of an enemy, such a movement should not be attempted in the day-time, within his reach, or on a high road, but by night, and through cross roads; and if the detachment form the head of the column of the advance guard, it should be connected with it by parties of fifteen or twenty horsemen, more or less, who can give warning of any attempt the enemy might make for the purpose of cutting it off from the main body of the advance guard, and can patrol the neighbourhood of their posts.

PARTIZANS.

A partizan is an officer detached from an army or a fortress, with any number of men whatsoever, and limiting himself to a certain determinate district of the country occupied by the enemy, either for some special purpose, or to harass the latter as much as possible. This officer is free in his movements, and, as secrecy and rapidity are his principal means of success, he does not communicate with the general who has detached him, unless after his mission is completed, or for the purpose of giving information which may be useful and which requires to be acted upon immediately, or to place his prisoners and sick in safety. Partizans are detached into an enemy's country, previous to invading it, or during the course of the operations, and they are sent on the rear and flanks of an invading army when it retires. In the first case, their intention is to obtain information of the enemy's movements, the positions occupied by his forces, &c.; in the second case, they may have more extended views, and partizans can powerfully assist an army in repelling an invasion.

To penetrate into a foreign country, and reconnoitre the enemy's preparations, requires talented officers, and men who can be depended upon. Partizans entrusted with this difficult mission will march in detachments strong enough to resist the patrols of an advance-guard or the enemy's skirmishers, because they must make prisoners to obtain the requisite information, if they cannot do so in any other manner.

In some cases, it may become necessary to detach one or more regiments of light cavalry under the orders of a general officer, who, occupying with a sufficient force the junction of a certain number of important communications, would send detachments to some distance, with orders to reconnoitre the country, get in between the enemy's columns or cantonments, and then return with every information concerning their strength, the direction of their march, &c. This mission might be facilitated by political events; for instance, France, in a war against Austria or Prussia, might be allied with some German power of the second class, whose territory is invaded or to be so. The officers sent in partizan would be favoured by the inhabitants, who would give them all the information they required.

If Mack, in 1805, had possessed a few active officers understanding warfare, he would have had early information of the French projects, and been able to take his measures accordingly.

If, in 1806, the Duke of Brunswick had detached a few clever men to reconnoitre the Coburg country, and discover the movements of the French, he would not have remained ignorant, until the unfortunate combat of Saalfeld, of the movement which caused the loss of the Prussian monarchy; he would not have dispersed his army to observe the enemy in every direction but the one which it was to take.

These operations would have been the more easy for the Austrians and Prussians, that they would have been assisted by the inhabitants, whose language they spoke, and by the nature of the country, which was hilly and wooded.

With respect to partizans which an army may detach upon the communications and flanks of an enemy invading its territory, if officers, thus detached, are in sufficient number, and perfectly acquainted with the country, and are at the head of considerable detachments, such as 400 or 500 men, more or less, according to the nature of the country and the expedition for which they are intended, they will be able to render the army the following services :—

The enemy, being nowhere in safety, must place strong garrisons in every locality where provisions are stored; thus, if its line of operations is extensive, its army will be much reduced in numbers. The smallest convoys must also be strongly guarded; the stragglers, convalescents, &c., will be cut off.

If the enemy forms moving columns to pursue the partizans, they must be strongly constituted; otherwise the latter, uniting, would soon force them to retreat. If these moveable columns are taken from the garrisons, the latter, being weakened, will run the risk of being cut off; if they are taken from the army, its operations will no longer be vigorous. Partizans, thoroughly acquainted with the country, speaking its language, warned by the inhabitants of any movements directed against them, have little to fear; whilst they retire, when any force is directed against them, then, suddenly returning, attack the weaker columns, destroy them, and weary the enemy by forcing him to be continually on his guard.

The correspondence of the latter, his couriers, orderlies, &c., being frequently taken, his designs will be known, whilst he will have great difficulty in discovering those of his adversary. If he acts with prudence, his movements must be slow, otherwise they will be exposed to a *coup-de-main* from men who never lose sight of them. Besides, it will be impossible to obtain any contributions, in money or provisions, which may have been imposed; the deserters from the army will be arrested, the recruits which had hoped to escape the service will be compelled to join. At the first report of the enemy's defeat, the partizans will follow up the pursuit, circulate alarming reports in their rear, and endeavour to effect a rising throughout the whole country.

It was thus the Spanish guerillas acted during the War of Independence, and the Prussian and Russian partizans, such as Tettenborn, Czernischef, Lützow, and Thielmann, in the campaign of 1813. Spain had risen against a prince imposed upon them by fraud and violence; Germany, tired of the French yoke, wished to free itself. The success of the partizans of those two countries may be easily conceived; and, if the guerillas had shewn more valour and less ferocity, they would have done the French cause much more injury; they possessed, besides, a serious inconvenience, which will generally be found in corps that have been formed in a similar manner, if the war lasts some time.

An officer, left to himself, can with difficulty cause discipline to be observed by his men. Being nowhere in garrison, constantly marching from one point to another, subject to no control in their operations, these corps, if they are not commanded by men endowed with great firmness and patriotism, will be the scourge of their fellow-citizens, and soon become privileged brigands; and, finding no longer a support in the good opinion of the inhabitants, who are only desirous of getting rid of them, they will soon fall into the enemy's hands.

The men who will be found really useful in the defence of their country, when the enemy penetrates into it, will be those commanded by officers accustomed to warfare, and who are under the command of a general officer. The latter will sometimes unite them, to attempt an important enterprize, and will impart to all their movements a direction determined by the Government or the general commanding the army, which will not be much weakened by these detachments. If 4000 or 5000 men are thrown upon the line of operations of the enemy, it will oblige him to detach a far greater force; for these detachments multiplying themselves, so to speak, by their activity, their strength will never be positively known, and will appear much greater than it really is.

We only speak here of partizans taken from the divisions of the army; they are the best, as discipline can more easily be kept up with them than with men who are united more to plunder their fellow-citizens than for any other purpose. The life of a partizan is very hard, for those who desire to do their duty: it requires great activity, and still greater vigilance. The state of poverty in which the mass of the Spanish and Portuguese population exists, the scarcity of agricultural labour or manufactures, and the iniquities of the French administration, were the causes that led great numbers of the people to become guerillas: but, through their excesses of every kind, they contributed as much as their enemies towards the ruin of their country; they have given to its customs and manners a character of ferocity; and of this, the events which have daily taken place in those two countries, since the war of 1814, furnish a sufficient evidence.

CHAPTER VI.

CANTONMENTS.

CANTONMENTS are the temporary dissemination of a body of troops, whatsoever its strength may be, in the villages or towns of a district or province.

The first object of a cantonment is to afford rest to the troops. An army, therefore, may be cantoned near the enemy, during the course of a campaign. In such a case, it is protected by an advanced guard, and by natural or artificial obstacles, the army being closely united, as it either intends to attack or expects to be attacked. Again, it may be cantoned during the winter months, after a severe campaign; or during an armistice, when the several divisions of the army are disseminated, especially in unfertile countries, that they may procure provisions more easily. When this takes place, the cantonment should be established in rear of a good line of defence, to prevent its being attacked suddenly; besides, a good military position should be determined on, where the several divisions can be united in the event of the enemy's making any offensive movements. This position should be in rear of the cantonments, otherwise the enemy, bearing down upon it, would defeat the several divisions successively, as they came up.

A mistake of this nature was made by Marshal Turenne, in 1645, near Marienthal, in Franconia. This great man, yielding to the representations of the officers commanding his cavalry, which had sustained great losses during a severe *campaign* against the Imperialists, had fixed his head quarters at Marienthal, on the Tauber, and portioned his army among the surrounding villages; but, feeling uneasy for the safety of his cantonments, he drew them closer in, and pushed forward reconnoitering parties to observe the movements of the enemy. One of these parties came back, on the 2nd of May, at two in the morning, with information of the near approach of the enemy. Turenne mounted, and, accompanied by his main guard, advanced to reconnoitre, whilst he sent immediate orders to the several divisions to meet at Herbthausen, about a league and a half from Marienthal, and a central position. In the meantime, the Imperialists came up, making sure of surprizing the army; Turenne could only oppose them with 3000 infantry and part of his cavalry; the enemy, far superior in numbers, defeated the right wing of the French, turned their position, and drove back the several divisions as they came up. Turenne was obliged to retreat with the loss of 1200 cavalry, the greater part of his infantry, and all his artillery.

The instance afforded by the British cantonments in Affghanistan, 1841, is still more striking. When Shah Soojah had been placed on the throne at Caubul, the troops were cantoned at Caubul, Candahar, Ghuznee, and Jelálabád, besides occupying several detached and isolated outposts. None of the divisions were in sufficient strength to defend themselves, and they were at such a distance from one another, that, at the breaking out of the insurrection, all communication between them was cut off. No position had been pointed out for concentration, the consequence of which was, that, as each was successively attacked, it awaited information of the fate of the others previous to deciding on what line of conduct should be pursued, which gave time to the insurgents to defeat each successively.

In countries of plains and forests, the first line of cantonments should be occupied by the light cavalry, for the same reason that the advance-posts of an army are generally formed of that corps; but it should also be supported by light infantry, otherwise the horses will suffer much from the severe duty.

It was according to these principles that the cantonments of the large French army in Poland, and on the Passarge, in Eastern Prussia, were formed, at the end of the campaign of 1806.

The French army, harassed by continual fatigue and severe engagements during an inclement season, was in need of a period of repose. The enemy having made a feint to take up his winter quarters in Russian Poland, an order was given for establishing the army in cantonments extending from the Bog, one of the tributaries of the Vistula, as far as the Baltic Sea. The small towns and villages situated on the right bank of the Vistula, were portioned out among the *corps d' armée ;* the Narew, the Rosoga, the Omulew, and the Orezyc, marshy rivers running perpendicular to the direction which the enemy would have to take in order to attack the cantoned troops, formed successive lines of defence extending as far as Ostrolenka, and were protected by the light cavalry of the several *corps d'armée.* The cavalry of reserve, consisting of the cuirassiers and dragoons, was in the rear, and cantoned upon the two banks of the Vistula, where resources were afforded which the other parts of Poland did not possess. The guards were cantoned at Warsaw and in its neighbourhood.

The Marshals commanding the several corps, had their points of concentration fixed at Warsaw, Sierock, Pultusk, Golymin, Mlawa, and Osterode, where their troops could unite before the appearance of the enemy.

Hospitals, and arsenals for the repair of arms and equipments, were established in the least exposed towns of each district occupied by the several corps.

Polish Prussia was entirely occupied by the French masses, whilst Marshals Ney and Bernadotte covered, by their cantonments in Eastern Prussia, the blockades of Dantzic and Grandentz. One hundred and fifty thousand men were thus spread over an extent of country fifty leagues in length, every part of which was closely connected together; an indispensable condition in a country covered with forests, in which the enemy could screen all his movements.

An offensive march of the Russians, which will be noticed at the end of the chapter, soon obliged the greater part of the army to be brought nearer the Baltic; but, after the battle of Eylau, it was again cantoned, only more united, and formed on several lines. The Passarge, which was defended by several *têtes-de-pont*, became its line of defence, upon which the light cavalry and the advance-posts of infantry were established; Osterode was indicated as the general point of concentration, where the heavy cavalry and the whole army could be united in two days.

No less judicious were the offensive cantonments chosen by Prince Eugène Beauharnais, behind the Saale, in 1813, to keep the Allies in check, until the reorganization and arrival of the French army. He inured his recruits to warfare, by a series of small engagements with the enemy, restored the moral courage of his troops, and maintained himself there, until the opening of the campaign.

These dispositions deserve to be studied. It is clear that infantry alone cannot reconnoitre a flat and woody country, where it would be necessary to march daily a long distance, before any information concerning the enemy could be obtained: its movements are slow, and, if placed in the first line, a vigorous attack might prevent its concentration, which would cause it to be beaten in detail. Light cavalry, on the contrary, besides being able to reconnoitre to a distance, can rapidly concentrate from remote points, and oppose the advanced troops of the enemy, necessarily composed of cavalry: during this time, information of the enemy's approach is quickly spread; the infantry assembles together; and when, at last, the cavalry is driven back, it finds a powerful support. To attack an isolated cantonment by surprize is possible, but when a whole line is concerned, it is then very difficult.

When an army goes into cantonments, the quartermaster-general is directed to have the district reconnoitered, in which the cantonment is to be established. The reconnoissance should be directed, first of all, to the military positions which it contains, so that information may be obtained respecting it, which can be rendered of use when occasion would require. Then each town, borough, and village, should be inspected, to determine what number of men or horses it can contain, and how long they can be fed.

In each cantonment, a main-guard and a piquet will be mounted, and an alarm-post pointed out.

If a cantonment is within reach of the enemy, or if it is too extensive, the troops should be united to that part which is most susceptible of defence; the roads and paths should be barricaded by carts, lashed one to another, or be cut off by ditches, barriers, &c.; outposts should be placed at these barriers, and, if requisite, at intervals between these outposts and the main body: these will be connected together by a line of sentries; and a mounted orderly will be always kept in readiness, to carry instant intelligence to the commanding officer.*

Regimental officers should take up their quarters in the street or district allotted to their respective corps, and the non-commissioned officers should always be quartered with the men of their squad.†

Let us suppose that a troop of cavalry is cantoned in a small town or village, where it has to guard itself with great care against any enterprizes of the enemy. It may, in such case, be assumed, that this cantonment is in the first line. But, without forming part of a chain of outposts, an isolated troop may be cantoned on the march, or to secure the communications; and if the country is disturbed, if the enemy has left parties there, or is in force in the neighbourhood, it will be necessary to take the same precautions.

---

* Manuel Général du Service des Etats-Majors, par le Baron Thiébault, Général de Division. Paris, 1813.

† General Orders of F. M. the Duke of Wellington, by Lieut.-Col. *Gurwood.*

The commanding officer, having arrived at the cantonment assigned to him with his troop, orders a piquet to be formed, and places temporary outposts at all the debouches; he then, together with the local authorities, makes a reconnoissance of the place, and receives from them all the necessary information concerning lodgings, stables, and provisions. Every precaution should be taken, even if the troop is to remain but one night in the place; for the enemy might have obtained information of its intended arrival, and surprize the detachment that very night. The commanding officer will, therefore, find himself seriously embarrassed, if he has not reconnoitered the neighbourhood of the cantonment, foreseen the possibility of an attack, or provided against the necessity of a retreat, which he should take proper measures to secure.

The nature of different localities renders this last measure one of great importance; for there are not two towns, villages, or houses, built or situated exactly in the same way, and, for this reason, the quarters to be occupied, as well as the nature of the defence, must vary according to their site and construction.

If the cantonment is in a defile, that space should be occupied which lies nearest the road to be made use of in case of a retreat, or which would favour the arrival of a support.

If the cantonment is crossed by a stream, the side occupied should be opposite the one by which an enemy may be expected.

If the houses are in detached groups, the one uniting the greatest advantages should be chosen; houses built of brick should be preferred, and thatched cottages avoided.

The men should be billeted in the smallest number of houses possible, and if there is no large inn, a farm or country house, with plenty of stabling, should be selected. In case of a deficiency of stabling, barns may be used; but the doors should be removed, so as to allow the horses to be got out quickly. Stables should, if possible, be chosen where there is an open space in front of them, and not where the doors give into narrow streets.

The choice of a suitable place for watering the horses should be attended to, and any inconveniences in its approaches immediately removed.

The men ought to be billeted in the same houses as their horses, or if this is not practicable, they should remain in the stables during the night. The officers and non-commissioned officers should always be near their own men. Frequent roll-calls should be made, to prevent the men from straying away. Only a certain number of the horses should be taken to the watering-place at the same time, if it is at a distance; and, if it is not protected by an outpost, it should be well reconnoitered every day by a patrol.

The external measures of safety require particular attention; for, as cavalry should avoid being attacked in the streets, some fixed place must be assigned for assembling: this is called the alarm-post. The enemy should have great difficulty in getting to it, whilst, on the other hand, the troops in the cantonment should have several ways of reaching it, and, besides, possess a secure retreat to the other cantonments. If two places are equally convenient, the men should be warned every evening as to which of them they should assemble in, if attacked. The roads by which the enemy might conveniently reach the alarm-post should be barricaded. All works, necessary to insure the safety of the troops, should be executed by the inhabitants, under the superintendence of an officer.

The streets leading to the houses and stables occupied by the men, should also be barricaded, if possible; and those which are used as thoroughfares may be encumbered, either by breaking them up, or by placing some obstacle across *them,* such as a waggon, &c. In fact, the approaches to that part of the town which is occupied by the troops, should be defended in every way, and no delay made in taking these precautions.

Before placing the outposts, the debouches which might be of use to the enemy, should be reconnoitered, as, perhaps, one outpost, well placed, would suffice; for a sentry, placed in a tower or elevated dwelling, might, by firing his musket, give sufficient warning of the enemy's approach.

If several debouches meet at the entrance of the town or village, it would be well to assign it as a place of assembly for the several outposts. This measure is of great consequence, as they might, when assembled together, be sufficiently strong to keep the enemy in check, until the troops within the cantonments are collected; but few localities, however, allow of this, unless the cantonment happens to be at the opening of a defile.

If, in case of alarm, the outposts cannot unite together, they should be ordered to fall back upon the cantonment. The nature of the localities determines which is the best plan. If there is, in the town or village, a convenient road for debouching, it would be better to assign it as a point of union, than to order the outposts to fall back on the alarm-post; for, should the enemy get there before them (a thing likely to happen in a flat country), they will be destroyed in detail.

The piquet should always be of reasonable strength, and a particular stable or shed should be assigned to it: its horses should always be saddled, and the men ready to mount: by day, they should be posted either within the cantonment itself or on the place of assembly of the outpost; at night, they should be stationed at the alarm-post. Frequent patrols should be sent round the country, to keep up the communication between the outposts and with the neighbouring cantonments.

If there is a corps of infantry in the cantonment, the duty might be divided; the cavalry taking it by day, and the infantry by night: the troops can then repose themselves, and the cantonments are better watched.

It often happens, that the roads by which the enemy can approach are so numerous, that they cannot all be guarded by outposts. In this case, there should be a piquet, composed of a third or fourth of the troops, whose duty it would be to patrol the neighbourhood at frequent intervals.

At dawn of day, the outposts are brought in, the barricades are shut up, and sentries placed there; patrols are sent round the country; the horses are saddled; the men are ordered to keep about the alarm-post, ready to mount at the first signal. Whatever might happen, the men should be ordered not to leave the houses or stables, as, in case of a surprize, it would only expose them to be easily destroyed. If attacked, they should fire on the enemy from the windows, until, the piquet having disengaged them, a sound of the trumpet will order them to mount.

In a cantonment which is much exposed, where assistance is with difficulty obtained, and localities cannot be made use of for defence, the troops should be perpetually on their guard; for they will not be long kept in such a cantonment without being relieved. They should always bivouac beyond the cantonment, and never two days following in the same place; the men should be ready to mount at break of day, and, at night-fall, the bivouac should be determined on, and the vedettes posted. A few feeble outposts are left at the debouches by which the enemy may approach, with orders to mislead the enemy in case of attack, and thus give time for the detachment to be prepared either to retire or to attack the enemy: but these precautions will very much depend upon the state of the weather; for, during heavy rains, the men and horses, wet through and fatigued by constant patrols, would oppose but little resistance to the enemy.

The commanding officer of a cantonment should form a plan of defence, and explain it to his officers. He should also make it generally known to the detachment; by this means, he will avoid the usual consequences of a sudden attack. He should accustom the men to be in readiness, by sometimes alarming the outposts; and if there appears to be any delay in getting the men together, they should be bivouacked, as, under such circumstances, this is the best punishment to inflict.

The defensive arrangements being settled, the commanding officer must endeavour to obtain food and forage from the local authorities. It should be ascertained whether the men are to be supported by those whom they are billeted on, or whether there is to be a distribution of rations, as, likewise, whether the neighbouring districts are to contribute towards filling the magazines. The commissariat is usually charged with the orders to this effect, but the commanding officer should see to their being executed. The magazines are placed as near as possible to the quarters occupied by the men, in order to have them more easily guarded. Magazines are not usually formed in the more exposed cantonments, but a small depot of provisions and forage is placed somewhat in rear, by which several cantonments are provisioned, either by sending men, or carts belonging to the army or placed in requisition, to the depot.

Information of the enemy's movements must never be despised, from whatever source it may come. It is, at all times, a serious error to neglect precautions, because a low estimate has been formed of the enemy. An adversary who can take one by surprize is always to be feared. Treat the inhabitants with kindness and firmness, and cause a severe discipline to be observed; for ill-treated inhabitants will often aid the enemy in a surprize. The Spaniards raised the guerillas to revenge the ill usage they received from the French, who paid dearly for it. Endeavour, on the contrary, to make use of the inhabitants as spies, by making them feel that their safety depends upon yours; that their houses would without fail be pillaged, if an engagement were to take place in their district; that, if your loss was occasioned by any intelligence the enemy received from them, a detachment would be sent to burn their villages, or make them pay a heavy contribution.

It was through neglect of these precautions, that the French troops were so often surprized by the Spaniards, during the War of Independence, in spite of the information they obtained from the authorities and their secret partizans. They often carried imprudence to too great an extent, and, amongst many examples which might be cited, the surprize of Arroyo-Molinos, on the 28th October, 1811, is one of the most remarkable.

General Girard, with the division of Estramadura, overran the north of that province to levy contributions and disperse the Spaniards. After having advanced as far as the frontier of Portugal, near the cantonments of General Hill, he arrived, on the 17th October, at Arroyo-Molinos, a village some leagues from Caceres, where he resolved to pass the night. General Briche, who, with a feeble brigade of cavalry, formed the rear-guard of the division, warned General Girard that, as he had been informed, the English had made a secret march, and were advancing upon them. He subsequently, by a second report, informed him that he had seen two strong columns marching on his right and left. The general paid no attention to these reports, cantoned at Arroyo-Molinos as if he had nothing to fear, and only ordered the usual outposts. The infantry and brigade of dragoons of General Bron were billeted in houses; the artillery likewise sent its horses there, and was defended by only one battalion of infantry. General Briche arrived at night, bivouacked with his brigade in the church-yard, which was surrounded with walls, and again warned General Girard that he ought to take precautions against an attack, as the enemy appeared very numerous;

the latter, however, more brave than prudent, sent him back for answer, that if General Briche did not consider himself sufficiently safe, he might come and share his quarters.

Towards ten at night, two peasants, one of whom was the Alcalde of Arroyo del Puerco, asked to see the General. Girard, who was at that moment engaged with some of his officers at a game of cards, desired his quartermaster-general to find out what they wanted. The two Spaniards informed him of the march of the English, the number of their forces, and their destination; adding, that they were only at a league's distance. The quartermaster-general, annoyed at being interrupted in his game, scarcely listened to them, and sent them away.

On the morrow, before daylight, a regiment of dragoons started for Merida, and General Raymond, with his brigade, for Montanches, without seeing an enemy; but, when the rear-guard was preparing to mount, General Briche perceived troops defiling in the darkness, on both sides of the churchyard: it was an English column marching upon Arroyo-Molinos, whilst two other columns of Anglo-Spaniards occupied the roads of Montanches and Merida. The French were already under arms, and, unconscious of danger, had begun to assemble on the road to Merida: it was raining in torrents. Suddenly, the English forces debouched and stormed the village; the artillery, with the infantry that had been placed to protect it, fell into their hands, without a blow being struck; the cavalry of General Briche, obliged to leave the churchyard by files through gaps, sustained heavy loss; General Giraud himself escaped with great difficulty; and, though his conduct was most praiseworthy during the retreat, yet his negligence of the previous night cost the French a loss of 1000 men and 16 pieces of artillery.

When the commanding officer has been warned, during the day, of the enemy's approach, he should, accompanied by the piquet, join the outposts, assemble them, and check the advance of the enemy. He will thus be enabled to ascertain the force of the attacking party, and give his troops time to assemble at the appointed spot: he should then fall back on his main corps, and either retreat, or continue his defence.

Sometimes a line of signals is placed along the exterior of the cantonment, to announce the approach of the enemy. A good signal, during the night, is a small faggot dipped in tar or melted fat, which can be lighted, and set on the top of a pole near the outpost.

A circumstance likely to prove dangerous, is, when an enemy enters a cantonment at the same time as the retiring advance posts. The only remedy will be for the piquet to charge both friend and foe, by which means the remainder of the troops may be saved.

An attack by night is always dangerous for the parties attacked, especially when the latter consist of cavalry; the barricades should be defended, and sorties made.

No very accurate principles can be laid down for a defence, as it depends so much on the nature of the localities, and the number of the troops engaged. But, in whatever situation an officer finds himself, he should not listen to any of the enemy's terms; although surprized, he should defend himself with whatever number of men he can assemble, and always endeavour to break through the enemy, or get into some building where he can defend himself with advantage.

Troops in cantonments can never be too careful about the measures which are taken for the general safety, and if, with respect to this matter, we revert to the unfortunate campaign of Affghanistan, it is because the Caubul cantonments afford a lesson which should never be forgotten.

The city of Caubul is situated between two ranges of lofty hills, along the ridges of which run lines of loopholed walls, with here and there small obtruding towers or bastions, too weak and too extended to be serviceable for purposes of *defence.* It is said to be about three miles in circumference.

On a hill, overlooking the city, stands the Balla Hissar, or fortified city of the kings of Affghanistan. There are, strictly speaking, two Balla Hissars; the lower part of which, on the entry of the British forces into Caubul, could not have stood for an hour against artillery. Both were commanded by the walled hills above them. The upper Balla Hissar, or citadel, commands the whole of the city and suburbs. The lower Balla Hissar, which is surrounded by a narrow but rather deep ditch, commands only part of one of the bazaars, two large forts, and the road to Jelálabád. The town itself consists of numerous narrow and winding streets, so that, from the summit of the fort, an expanse of flat-roofed houses is alone seen, and the thoroughfares of the city are seldom to be traced. The houses, built with unburnt-brick walls and mud roofs, have as little timber as possible in their construction; this material being costly at Caubul: hence they are not easily set on fire. From their irregularity of height and construction, and from the jealousy which guards each flat roof from the gaze of the curious, by surrounding walls, communication from house-top to house-top would be very difficult, except in a few portions of the more regular parts of the city. The Caubul river enters the city, after breaking through the chain of hills; and the line of hill, between which and the river the city lies, is steep and difficult, but accessible; its domineering aspect formerly led to its being included within the defences of Caubul, for a stone-wall with a crenelated parapet runs along its summit, and dips down to the gorge, where the river runs through. The ends of some of the streets which cross the main thoroughfares, abut upon the foot of the hill, which thus look into them; but, as the minor streets are still more tortuous than the main ones, such views along them are very partial.

It having been decided that a portion of the British troops was to remain at Caubul, Sir William Macnaghten was pressed upon the subject of cantoning them; but it was not until the winter of 1839 was fast approaching, that any steps were taken in the matter, and that an officer of engineers was sent to examine three small forts, as a position for the force, situated several miles west of Caubul, possessing neither cover, space, nor water, and which, besides, were ill placed in a military point of view. These were at once rejected by the engineer, and the Balla Hissar was decided on as the only suitable spot; as, by taking advantage of what already existed, it was possible to obtain good and sufficient cover, whilst it was impossible, before the winter set in, that is to say, in the course of six weeks, to build barracks, hospitals, sheds, and stables, for a brigade and its attached cavalry and guns, outside the Balla Hissar; building materials having as yet to be made and collected. The necessary consent, however, could not be obtained; and the opportunity was lost, of rendering the citadel a post which, with a thousand men, a few guns, and proper provisions, might have been held against all that Affghanistan could have brought against it: the troops were lodged in hastily prepared accommodation at its base.

In the course of 1840, cantonments were formed about two miles distant from the Balla Hissar, on the Kohistan road, and separated from the citadel by the Caubul river and a canal. Situated on a piece of low ground, they were extensive and ill defended. Nearly a mile in extent, they were surrounded by ramparts so little formidable that they might be ridden over. Near the cantonments was the mission compound, occupying an extensive space, and surrounded by a number of houses and buildings belonging to the officers and retainers of the mission. There was here, also, an attempt at defence, but the walls were of no protection; and the whole expanse of building, the entrenched camp and mission compound together, was so laid out, as to be commanded on every side by villages, forts, gardens, and other cover for an enemy; so that the troops could neither enter nor leave the camp, *without* exposing themselves to a raking fire from some one of these points of attack; and, to add further to their embarrassments, the commissariat supplies, on which the army depended for its subsistence, were stored in a small fort, not within, but beyond the cantonments. The communication between the two places was commanded by an empty fort, and by a walled garden, inviting the occupation of the enemy. The whole of the troops were, however, not united there, but a portion had been left in the Balla Hissar.

We here find three great errors committed by the British general:—1st. His small force being divided, without, at any time, being able to concentrate, if necessary; 2nd. His cantonments being too extensive to be defended, and overlooked by adjacent heights and buildings; 3rd. Not being able to protect his commissariat stores, and, lastly, having no line of retreat secured.*

ATTACK OF CANTONMENTS.

We now proceed to the means of surprizing troops while in cantonment, and who are either badly guarded or easy to surprize, whether from their small numerical force, or from the nature of the locality.

To effect a surprize, exact information should be obtained of the nature of the surrounding country: this is procured secretly from some height, or by pushing back, some days before the enterprize, any outpost which protects it from being reconnoitered. If these means cannot be resorted to, spies are sought out amongst the inhabitants, or a soldier, in disguise, is sent to reconnoitre.

It is necessary to know—1st. The strength of the troops cantoned, and their organization; 2nd. The manner in which the duty is carried on; 3rd. The alarm-post, the line of retreat, and the time necessary for succour to arrive from the nearest cantonment; 4th. Which are the roads most convenient to go and come by, and whether any one in particular leads to that of the enemy's retreat; 5th. Whether the officer commanding does his duty and makes his men do theirs, or whether he is negligent.

---

* Eyre's Caubul. Hough's Army of the Indus, 1838-39. Kaye's Affghanistan, vol. ii.

If, in the cantonment, fairs or market-days are held, and that, at such times, particular precautions are not taken, such days should be preferred.

It was thus General Lefebvre-Desnouettes was surprized at Altenburg, in Saxony, the 28th September, 1813. When ordered to pursue the Prussian General, Thielmann, who had thrown himself, as a partizan, on the French communications, he defeated him near Mersebourg, and obliged him to retire upon Bohemia; after which he marched to Altenburg, and there cantoned his division. Thielmann, united with the Russian General, Platoff, who, besides his Cossacks, had some Austrian troops under his command, stationed himself near Altenburg. The inhabitants, who were favourable to Thielmann, invited the French general to a ball, which, from the doubtful friendship of Saxony at that time, ought to have inspired suspicion. Towards daylight, Platoff entered Altenburg and surprized the French troops, who retreated in disorder to Weissenfels. A Bavarian battalion, which protected the outlet of the town, was surrounded and taken, whilst Thielmann, who had borne down on the left flank of the French, tried to cut off their retreat. A captain of the 6th dragoons, however, made a firm resistance, with his troop, at the passage of a bridge not far from Zeitz, and, by his steady fire, prevented the Cossacks from debouching soon enough on the French rear to support Thielmann; by which he rendered an important service to his general and to the army.

It is from such information, more or less to be depended upon, that a project of attack is formed or given up. There is, however, one case in which, without being perfectly in*structed* about all these details, it would be judicious to attack a cantonment; and that is, when an army can be brought to attack it the day it has been occupied, or the night following: for then, the enemy cannot have had time to make himself perfectly acquainted with the localities; it is probable that his outposts are badly situated, and that they will be easily thrown into confusion if attacked.

One principle should be strictly attended to: this consists in attacking a cantonment, not with advance-guard or skirmishers, but with superior numbers, sufficient to overwhelm the enemy at once, and leave him no hope of resisting; by this means, fewer men are lost, and the place is taken before support can reach it. The following surprize, though well combined, was without any important success, because the attacking force was preceded by sharp-shooters.

A corps of five thousand Spaniards, under the command of the Marquesito, secretly marched from the Asturias, and, by a well directed movement, simultaneously attacked Santander and Torre la Vega, situated about five leagues from each other. This was on the 14th of September, 1811; and the French were completely surprized. Part of the garrison of Santander, dispersed in their several quarters, managed to unite, and broke through the enemy, sword in hand, with their General, who led them to Torre la Vega; whilst the remainder, under the orders of a brave officer, held firm in the barracks, and could not be taken. The garrison of Torre la Vega, billeted in several detached houses, consisted of five companies of infantry. It was attacked at daylight, on several points, by about two thousand Spaniards; but the attack being preceded by skirmishers, gave the French time to assemble. Part of the garrison made a vigorous sally, drove back the advanced troops of the enemy, and, pursuing them, obliged the remainder to form line. The Spaniards renewed their attacks, but were kept in check until the evening, when the French garrison of Santander, suddenly appearing on their rear, forced them to retire. The loss on both sides was considerable, many officers of superior rank being killed on the French side. The Spaniards would have succeeded, but for their too great caution; as, instead of allowing their columns to be preceded by skirmishers, they ought to have attacked the cantonment in a vigorous manner. Had the French been worsted, they would have lost the province of Santander; for the other cantonments, dispersed along the coast, and unable to unite, would have been destroyed one by one.

Foggy or drizzly, rainy, weather is very favourable for a surprize: during a fog, but little can be distinguished, and in rainy weather, the outposts and sentries generally seek shelter. A surprize may also succeed during broad daylight, in very hot weather, as the troops, exhausted with watching, are then inclined to sleep. Thus the army under Marshal Soult surprized the passage of the Tagus, on the 1st of August, 1809, at the bridge of Artzobispo; it was one o'clock in the day, and, the whole Spanish army being nearly asleep, but little resistance was offered.

A surprize is more easily effected during daylight, especially when it is to be made by a body of cavalry: the men can be better watched, and prevented from indulging in the disorders incidental to such occasions; it is, besides, less difficult to take measures depending on the nature of the streets, of villages, and the roads lined with hedges which lead to them. But, in any case, the march is usually made by night, so as to be able to begin the attack at daylight, or to ambush and await the favourable moment.

When intending to surprize a cantonment, the leading column should consist of infantry, as it is not seen so soon as cavalry, and makes less noise in marching: reconnoissances should only be made close around, and, if the enemy's patrols are met with, they should not be pursued. It would be more prudent to order that the muskets should not be primed, as one of them going off, during a night march, might occasion irreparable disorder; an accident of this nature caused the complete failure of a well-combined sortie, made by the garrison of Mayence, 11th April, 1793. It was formed in three columns, and marched against the Hessians who were posted round the town on the heights of the right bank of the Rhine. Aubert Dubayet commanded the column marching along the bank of the river by Biberich; its advance-guard had already surprized the enemy's outposts, and was continuing its march with confidence. Suddenly, a musket was fired, and a man wounded by it; a general confusion ensued, and all fled, thinking they were surrounded by the enemy: many Frenchmen were killed and wounded, and, in spite of the efforts of Dubayet and Kleber, order could not be restored.

To each division of the column an officer should be assigned, who understands what he is required to do; a guide should also be given, as well as a password; and, if any apprehension exist from similarity of uniform, a handkerchief, or other distinctive mark round the arm, may be used.

Though no general principle can be laid down, which would apply to every case, yet the following rules will be very useful, and can be modified according to circumstances:—

1st. Since any body of men, deprived of their leader at the moment of danger, generally become completely demoralized, it will be of great importance to get possession of the general and other officers.

2nd. Cavalry, when dismounted and surprized, being but little able to offer a firm resistance, the stables should be first attacked, and the horsemen taken prisoners as they arrive or endeavour to get out.

3rd. To prevent the enemy from escaping, care should be taken to place a strong force on the road which he must take in his retreat.

4th. A reserve is absolutely necessary, to support the attack, and take charge of prisoners.

5th. All attacks on cantonments should be made with the greatest vigour and rapidity.

The best plan to fulfil these several conditions would be, to divide the attacking force into three divisions: the first, to form the attack; the second, to cut off the retreat; and the third, to act as a reserve.

When arrived near the cantonment, a halt should be made, and a party sent to find out by which road the surprize is to be effected and the outposts cut off; the second division is ordered to post itself on the enemy's line of retreat, and, when it has been ascertained that all this is done, the attack should begin: the reserve is placed on the line of retreat of the attacking force, and from it patrols should be sent out, to discover if any support is likely to be sent from other cantonments.

If the column consists both of cavalry and infantry, the infantry should form the attacking party, and the cavalry form the divisions posted on the lines of retreat.

It should be observed, that many localities do not allow of a corps making a circuit to post itself on the line of retreat, or that this circuit would be too long; such are small towns and villages situated in valleys, along a stream, or surrounded by vineyards: it may then be necessary to force through the cantonment itself, in order to reach the enemy's line of retreat. If such be the case, the division must be at the head of the column, and must, by a vigorous attack, break through the enemy, and take up its position in his rear, whilst the second division continues the attack in the town.

Such is the outline of a plan to be adopted, when it is only intended to cut off an isolated cantonment. It is a partizan stroke, which may have its use like all others of the kind. But should it, on the other hand, be only the beginning of a more extensive design; if the detachment, which executes the attack, forms part of the advance-guard of a *corps d'armée* on the march to surprize its adversary; no delay is made on the road, and the cantonment is taken, only because it is on a communication which is required: it would be, on the contrary, more prudent to pass it by, with the certainty that it cannot escape the troops which follow. In such a case, an army is directed upon the rear and centre of the enemy's cantonments, and his troops are surrounded as they come up.

If the Russian general, Beningsen, had followed this principle, in January, 1807, the corps of Marshal Ney, being surrounded, would certainly have fallen the victim of its commander's imprudence, who, in spite of the orders he had received, disseminated his corps over a space of twenty-five leagues, and was no longer able to have the support of the rest of the army.

Beningsen, cantoned some leagues from Ostrolenka, masked, by his Cossacks, the flank movements which he contemplated. In five days, he concentrated his army, 80,000 strong, behind the great forest of Johannisberg, impenetrable to the French, and bore down on the head of Ney's cantonments, extending within ten leagues of Königsberg. His advance-posts were surprized and defeated by the Russian advance-guard, forty squadrons strong: and, on the 20th of January, 1807, the whole army, passing between the lakes of Spirding and Löwenthin, pushed the French back upon Guttstadt through Bischoffstein and Heilsberg.

This too extended movement gave Ney time to concentrate his forces upon Gildenburg; but, if the enemy had advanced at first upon Neidenburg, he would have turned Ney's cantonments, and cut them off before they were able to unite, and thus placed them in a most critical position.

CHAPTER VII.

ON FORAGING.

It has been explained, in the early part of this work, that troops cannot always depend upon the magazines being provided with everything that is necessary for their subsistence, and that they are often obliged to make requisitions for provisions, and even, on certain occasions, have to procure them by plunder. The operation, by which troops thus obtain provender for their horses, is termed foraging. Foraging is of two kinds: one to obtain dry forage, the other green forage. In the first case, the troops either obtain the supplies from the inhabitants, or gather in the harvest themselves; in the second, they cut down the grass or the young corn. Forages are made, to prevent soldiers disbanding over the country, committing disorders, and wasting its supplies; and, that a just division of the forage should take place, so as to avoid waste, and preserve discipline. This measure should never be neglected, when it is necessary to obtain provisions by forced requisitions, and a responsible officer ought invariably to be sent with the men. It is to be observed, that, in countries thinly populated, deserted, or defended by the inhabitants, the system of forced requisitions is unavoidable, as there are no local authorities to enforce the levy of requisitions, and the soldier must himself seize upon the necessary supplies.

The method by which the troops provide themselves with food, straw for their beds, wood for the fires, &c., is conducted on the same principles as foraging.

Foraging was formerly an important operation; great precautions were taken to conceal it from the enemy, and, to prevent interruption, the whole army sometimes was under arms.

The history of the wars of the eighteenth century is replete with details of these operations, which are now considered of very secondary importance, since armies have become more rapid in their movements, remain less time in presence of the enemy, and can find subsistence almost anywhere. At the present day, it is seldom that a general forage is made; but, usually, each brigade or division sends out detachments for this purpose, according as it is requisite.

Officers appointed for that purpose, reconnoitre the country where the forage is to be made, as often as circumstances will allow. A commissariat, or an officer of the staff, should examine the resources which the country offers, and allot to each corps a certain district. These precautions are frequently neglected, and the troops, consequently, forage anywhere within the given range. This is a serious error, sometimes originating in the carelessness or the defective organization of the staff, and causing the loss of a considerable quantity of provisions, which are wasted by the soldier, in his improvidence of the morrow. Some corps obtain an abundant supply, whilst others are without any, because they have been less fortunate in their researches: hence unpleasant rivalries arising between different corps, immense fatigue undergone in foraging, and the impossibility of remaining as long in a position, as the army might otherwise have done.

The cavalry is, usually, cantoned as much as possible; it is less frequently bivouacked than infantry, but is billeted in villages which afford provender and accommodation for the horses. The officer in command should see that the authorities provide each day the necessary forage, and should take care that it be not pillaged by the inhabitants. It is only when the resources of the cantonment are exhausted, that the men should be sent elsewhere to obtain provisions; in which case, an order should be given to this effect, and, besides, no soldier should be allowed to forage for himself individually. If a forage is to be made within range of an enemy, it requires particular precaution.

DRY FORAGE.

When the detachment arrives near the district where the forage is to be made, the escort hastens on, and occupies the principal approaches. The foragers remain behind, whilst the officer in command enters the district, and makes his requisition of the local authorities, endeavouring to persuade them, for the sake of the inhabitants, to raise no difficulties, as, in the alternative, the soldiers would proceed to pillage the houses. If the requisition is granted, the forage must be brought beyond the district by the inhabitants themselves, and there loaded on the carts or horses. If, from the slowness or the unwillingness of the inhabitants, who may be awaiting the arrival of the enemy, or from any other circumstances, the officer is prevented from adopting this measure, the forage should be forcibly taken. A rapid reconnoissance is accordingly made, of the quantity contained in each dwelling; these, after being numbered, are assigned to some particular corps, and sentries are then placed over the barns, &c., which have been portioned off.

It is certainly very dangerous to allow the detachment to disperse amongst the houses, as, in the event of the enemy making a sudden attack, it would be excessively difficult to assemble the foragers, who would be more occupied with pillaging than with getting the forage together; an order should, therefore, be given, for all the forage to be brought to a certain spot, whence it would be taken by other men, and loaded on the carts or horses: by these means the men will be more at hand, and the foraging more quickly over.

To facilitate the division of forage, it is useful to know that a cubic yard of well-pressed hay weighs about 225 lb., and a cubic yard of straw about 145 lb. It is thus easy, by multiplying together the three dimensions of the space occupied by the forage, to find out the number of cubic yards it contains, and from thence to calculate the number of rations, each varying in weight from 10 to 15 lb.; for example: a barn, filled with hay, is found by measurement to be 10 yards in length, 5 in breadth, and 3 in height; it will contain 150 cubic yards, which will give 3375 rations of 10 lb. each.

If the hay or straw be cylindrical ricks, which is the case in many places, the quantity of cubic yards which it contains, will be found, by multiplying half the diameter of the circle which forms the base, by the circumference of that circle, and then the product thus obtained, by the height of the rick. For instance: let us suppose that the circumference of a hay-rick is 12 yards, the third part, viz., 4 yards, will be the diameter of the base; let the height, again, be estimated at 6 yards; then 6 × 2 × 12 = 144 will give the number of cubic yards contained in the hay-rick, or 3250 rations of 10 lb. each.

A cubic yard of grain contains 20·25 bushels, or about 80 medium rations of 8 quarts each. It is easy to give to the heaps of grain which are found in the granaries, a form adapted to facilitate measurement; and, as this cannot always be one yard in height, it may be limited to the half or one-third of a yard. It is very useful to know the different weights of grain, either for loading a horse, or for the distribution of rations.

A bushel of Wheat weighs 62 lb.
„ Rye „ 58 „
„ Barley „ 54 „
„ Oats „ 42 „
„ Maize „ 66 „

It should be remembered, that, in the field, the weight of each ration depends on the quantity of forage obtained; whole rations are distributed, when this can be done; if not, a general order determines their weight and nature. In all southern countries, hay is scarce; the straw is generally chopped, and more nourishing than in northern countries, and barley is often used instead of oats; but the former requires great precaution, as it is often very injurious to the horses.

When the distribution has been made, the foragers, under the charge of an officer, enter the houses; care should be taken to prevent any private soldier being left by himself. Sentries are placed at the entrance of all the dwellings which are not to be entered; patrols are sent through the town, during the operation, and all plunderers arrested. Servants and suttlers should be particularly watched.

The near neighbourhood of the enemy, or the nature of the locality, will determine whether the horses should be left at the entrance of the village, or brought to the doors of the habitations: if the latter plan be adopted, less time and forage will be lost; if the former, the detachment will be sooner ready for defence. In certain localities, both systems could be combined, by assembling the horses in some place within the town.

If there is nothing to fear for the foragers on their return, it would be better to make them return by sections, according as their horses are loaded; an officer being sent with each section. If the foraging is then interrupted by the enemy, there will always be a number of men in safety and provisioned, and the crowding together in narrow roads will be avoided—a circumstance attended with extreme danger, in a rapid retreat made with horses heavily laden.

There is a more expeditious system of foraging, which must often be had recourse to; it is the more advantageous, that the enemy cannot be easily informed of it, and is, besides, deprived of resources by which he might otherwise profit. When the advance-posts of both armies are not too near each other, advantage is taken of the protection of the reconnoitering parties, to obtain the forage; the enemy, who is not in any fear of the reconnoitering parties, seldom attacks them, and allows them to advance; detachments are therefore made to *accompany* them: these disseminate themselves, in small parties, over the country which is to be foraged, and, collecting as much forage as possible, quickly make up their trusses; their retreat is protected by the reconnoitering party, which has in the mean time remained perfectly quiet. The foragers should be very prompt in their movements, so as to escape the observation of the enemy, who might otherwise cut them off.

This is a difficult calculation, which can only give approximations, but with it we must be satisfied in warfare.

The produce of all pasture grounds varies exceedingly. Good meadow land will give from two to three tons an acre, whilst, in many districts, the land will not give one ton to an acre. The produce of fields with cereal crops likewise presents great difference, so that no fixed rules can be given: the simplest way is to obtain information from the peasants of the neighbourhood, who are perfectly acquainted with the produce of their land, or to cause a few square yards to be mowed and weighed, and from thence to calculate the remainder.

The foragers and their escort being assembled, the former are each provided with two forage ropes and a bag, and, if necessary, with sickles; sometimes, also, a scythe is given to each squad: the foragers should, besides, be armed with swords, and their horses should be saddled. The escort, composed of cavalry or infantry, according to the nature of the country, marches in advance, and at a sufficient distance to reconnoitre the neighbourhood and place a chain of posts who will give warning of the arrival of the enemy; in addition, some men under arms march with the foragers, to maintain order during the operation. Whenever it is practicable, the foragers should be accompanied by carts, put into requisition in the cantonment or near the camp, by means of which the horses will be saved much fatigue.

Each forager makes two trusses, weighing together from 200 to 300 lb., sometimes more, according to the distance they have to be carried. They should be closely packed, and securely balanced on each side of the horse; if the animal is much burdened, the forager should walk alongside of his horse. The grain is put into the bag, which is placed on the front of the saddle.

The horses should never be allowed on the fields, as they would occasion a considerable loss, by treading down the corn, &c.; they should be drawn up on the nearest road; by this means, the mowers will be more free, and all disorder will be prevented.

As forage is not always of the same quality, the bad should be divided along with the good, and neither distributed entirely to any one corps.

FORAGING FOR GREEN CROPS.

When the army, or any portion of it, requires green forage, commissaries, or, if there be no commissary, the quarter-master of the regiment, under the orders of the general, or commanding-officer, will make a requisition upon the magistrate for it, and will point out to him the field or place from whence it can be provided. The magistrate is then to have it cut, and the forage is to be delivered to the troops, by the commissary, in rations, according to the ordered proportions. A guard will be left in the field, in charge of the remainder of the forage, after the commissary has made his delivery. If there be no magistrate, or if the magistrate refuse to deliver or cut the green forage, or if it be necessary, on any account, that the troops should cut it for themselves, the commissary of the brigade or regiment, accompanied by an officer of the quarter-master-general's department, or, if there be none with that division of troops, by the quartermaster of a regiment, and, if possible, by the magistrate of the place, or the occupier of the ground, or by some inhabitant of the country, is to proceed to value the field, and to estimate the number of rations of forage it contains.*

---

* *General* Orders of F. M. Duke of Wellington, by Lieut.-Col. Gurwood.

In war time, it is often impossible to choose one's own forage, but there are certain points which should be guarded against. Great care must be taken, when rye is given to the horses, that they are not watered within two hours before and two hours after the feed: the same rule should be observed when they are fed with Indian corn or barley."*

Green fodder is better than new hay. The green fodder, cut in meadows, where the grass is of some height, is the best; next, amel-rice is the least indigestible green fodder; but it is not so nourishing as lucerne and trefoil or clover. Large quantities of clover, however, when given alone, prove injurious to horses. The French cavalry, in 1812, after having reached without loss the banks of the Niemen, lost, in a single night, upwards of a thousand horses, which had had too liberal a supply of clover. Lucerne and clover, when dried, are deprived of a portion of their noxious qualities; and clover, cut in the evening, seldom causes sickness.†

As soon as a forage is terminated, the commanding officer should demand a certificate from the authorities, stating that no damage has been committed in any dwelling; if there has been any, it should be paid for by those who committed it, or by the corps to which they belong. The army will soon find the advantage of being severe on this head; it will gain the confidence of the inhabitants, and the soldier will be disciplined.

The straw for bedding, and the wood for cooking, are obtained in the same manner: the place where the wood is to be cut should be pointed out, and a certain number of men regularly warned for this duty; if this is not attended to, houses will be demolished, fruit-trees will be cut down, as well as small woods useful as a means of defence, &c., in order to obtain firewood.

---

* General Orders of F. M. Duke of Wellington, by Lieut.-Col. Gurwood.

† Hough's Army of the Indus, 1838-39, p. 96. Advance Posts of Light Cavalry, by General de Brack, translated by Major Begbie.

Provisions for the troops are sometimes obtained in the same manner as the forage; that is to say, the wheat and provisions are taken from the inhabitants, or the troops gather in the harvest themselves; possession is taken of the mills, and the soldiers grind the corn. They are often sent to a distance to obtain cattle of all kind, and drive them to the camp; but these circumstances only take place in countries where the inhabitants are struck with fear, or are in a state of insurrection. In the plains of Vich, during the war in Catalonia, 1810, General St. Cyr made his own soldiers gather in the harvest, and thereby obtained provisions for some time.

ESCORT OF FORAGING PARTIES.

To protect a foraging party, two conditions must be fulfilled; the first is, to warn it of the approach of the enemy some time in advance; the second, to prevent his arriving too suddenly on the place of operation. Chains of outposts should, therefore, be placed in front of the foraging party, at sufficient distances to give the foragers time to retire or prepare for defence: these outposts should be supported by one or more reserves, placed between them and the foragers; constant patrols should reconnoitre the country in front of the outposts, during the whole of the operation. If the forage is carried on in a village, the streets and approaches should be speedily barricaded, whilst the line of retreat should be kept as clear and free from obstacles as possible. If the country, between the outposts and the foragers, is not suited for the placing of reserves, the latter should be placed a little in front or in rear of the flanks of the district or meadow, where the forage is carried on; but, as all these measures must depend on the nature of the localities, and the district to be foraged may be at the entrance of a defile, the reserves should then be placed *at the* debouches, so as to drive back the enemy who might have come through it; for cavalry should engage as seldom as possible, with a defile in the rear.

When the forage is carried on near a stream or river, the bridges should be barricaded, and outposts established at the fords. These dispositions would of course be much modified, in case of infantry being made use of, as they are well suited for the defence of villages and broken country.

If any of the outposts send information of the enemy's approach, great firmness should be shewn, and the foraging still carried on, until it is ascertained that the enemy is in strength, and that he really intends to attack. It depends entirely on the nature of the locality and of the troops, whether he should be opposed or not. If, from the reconnoissance which has been made of the enemy's strength, it is considered prudent to retreat, the foraging party should be immediately ordered to mount, with whatever forage they may have obtained, and their retreat be protected by the reserves. It is on such occasions that the advantage of having carts is felt, as they can be escorted by a few men, whilst the remainder can protect them. The trusses should not be thrown away until the last extremity, as the enemy would then have succeeded in his attempt; but the strength and rapidity of an enemy's attack, unfavourable localities, &c., will sometimes require this to be done, to save the foraging party. A defence of this nature has evidently great analogy with that of a cantonment or of a convoy; we should not, in this any more than in the latter case, pursue a vanquished enemy: the principal object is to forage, and it should not be deviated from.

ON THE ATTACK OF A FORAGING PARTY.

The attack of a foraging party is based on the same principles as the attack of a cantonment. It is requisite to be acquainted with the positions of the outposts, the nature of the reserves, and the line of retreat of the enemy, and to calculate the time necessary for him to obtain supports. As he is probably vigilant and on his guard, success cannot be hoped for, except by acting with vigour, and taking every advantage afforded by the localities. The chain of outposts should be broken through, the reserves vigorously charged, whilst a detachment occupies the debouches of the retreat. If the enterprize be carried on in this manner, the forage will without fail be interrupted, the foragers taken or sabred, and the reserves, attacked in flank and in rear, will be destroyed, or will only fight to make way for themselves.

If the enemy is too strong to be attacked in this manner, still, by harassing the outposts and reserves, the foraging party, being constantly kept on the alert, will waste all their time, and obtain but little forage.

CHAPTER VIII.

ON CONVOYS.

A CONVOY is the moving of ammunition, baggage, provisions, arms, prisoners, wounded, &c., under the charge of an escort.

The escorting and defence of a convoy is one of the most important commands an officer can be entrusted with; for nothing is more difficult to defend, or more easy to attack, than a long line of waggons or boats, which are often delayed by the smallest obstacles. Yet, however difficult such an operation may appear, an officer, endowed with intelligence and courage, will often overcome difficulties which would cause an ignorant and inert man to fail; for if, on the one hand, the defence of a convoy is difficult, on the other, the attack is often badly planned and executed.

In escorting a convoy, there are important principles to be borne in mind; and although an escort may be defeated by a superior force, still, if these principles are observed, the chances will be diminished or the consequences lessened.

The escort of a convoy usually consists of infantry and light cavalry; in some cases, artillery is added.

The officer appointed to command the escort, should receive a register of the waggons or beasts of burden of which the convoy is composed, and a written instruction to regulate his conduct according to any circumstance which may arise; he should also obtain all the information possible concerning the roads he will have to pass through, the difficulties they may present, and the position and strength of the enemy; he should, likewise, be furnished with guides.

The waggons are assembled the night before, near the road which is to be taken; and, although there is generally an officer of the commissariat with a convoy of provisions, and an officer of artillery with ammunition, the commanding officer of the escort should, nevertheless, satisfy himself that the waggons are in a fit state, and their contents properly packed; that one carriage is not loaded more than another, or if so, that it is better cattled. These measures are of consequence, for if the effects, badly packed, should fall off, or one waggon be drawn more slowly than another, the march of a convoy will be continually retarded.

In most cases, the means of transport are furnished by the inhabitants of the country, from whom it is demanded, as those belonging to the army rarely suffice. This system, being a very great tax on the inhabitants, requires a great deal of watchfulness on the part of the escort, as, in the moment of danger, the carters and muleteers cut the traces of the horses and belly-bands of their mules, and thus escape amidst the confusion. The commanding officer should, therefore, be on his guard against their questions, and let them know they will be fired at if they attempt to escape.

A good-sized cart, with four horses, occupies, on the road, about fifteen yards: thus one hundred carts would occupy about three-quarters of a mile, which distance will be much increased if the shaft be used instead of the pole, and the horses harnessed one before the other; it is therefore advisable to form the convoy in double file, as often as the road allows of this being done. If the carts are not heavily laden, no delay will be incurred, as, instead of making one-half the convoy halt, whilst the remainder retakes its place in front (which would be necessary on arriving at a narrow bridge or village), one side could trot up to the front, whilst the other continued its pace: the column thus regaining single file, without any time being lost, whilst there would be the advantage of marching in double file whenever this is possible.

An important point to be observed, in the formation of a convoy, is, always to make use of the mode of transport adapted to the nature of the country. Napoleon felt the evil of deviating from this principle in the Russian campaign, 1812, where he depended for his supplies upon a multitude of waggons, each destined to carry several thousand pounds weight, over sandy plains where carts, laden with a few hundred weight, were drawn with difficulty.*

Carts, well horsed and not heavily laden, and upon which the infantry can be placed, may be made to go at a trot; the same pace may also be obtained from beasts of burden: but, in general, one cannot depend upon more than three miles an hour; and, in hilly, rugged roads, two miles, and sometimes less. The excessive slowness of oxen should prevent as much as possible their being made use of; but, in the mountainous districts of Italy and France, and in parts of Spain and Portugal, it is often impossible to obtain any other means of transport. In most of the Spanish provinces, in the Pyrenees, and Piedmont, mules are made use of more as beasts of burden than of draught. Donkeys are also used for the same purpose. These animals can go through the most difficult paths (which is often necessary, when escaping from the enemy), but much attention is required to prevent disorder, as the animals, when frightened, crowd together, which crushes and often destroys their burden. In Ceylon, where almost all the traffic of the interior is carried on by means of small oxen, the drovers make fast the burdens to the horns of these animals, so that, if frightened and attempting to throw off their burdens (as animals generally do on such occasions), they are immediately stopped by the weight on the ground, which keeps their heads down.

If the convoy is very large, it should be divided into two or more sections, each of which should be under the charge of an officer responsible for its order, and, if possible, empty waggons should be attached to each section, in case of any of the others breaking down. Each description of stores should be placed as much as possible in the same section, and the sections containing the most important part of the convoy should be placed near the head of the column.

---

* *Ségur, Expédition de Russie*, liv. 3, ch. ii.

Convoys consisting of beasts of burden, should not be allowed to go in crowds, but should, likewise, be divided into sections, and, if possible, there should be a conductor to every two horses or mules.

The escort of the convoy being assembled, the commanding officer, after having inspected it, should divide it into five detachments, viz.: 1st, an advance-guard; 2nd, the flankers of the advance-guard; 3rd, the main body; 4th, the flankers of the main body; 5th, the rear-guard, which should likewise have its rear-guard.

The formation of the advance-guard will depend upon the length of the convoy, and the nature of the country it will have to pass through. Where defiles occur, of which the heights are required to be occupied in order to anticipate the enemy, or if those defiles are expected to be encumbered, infantry in sufficient number is necessary; but in a flat, open country, light cavalry alone will suffice. The time of departure should be calculated by the length of time necessary for the convoy to be placed in a state of defence, the kind of enemy expected to be met with, and the obstacles likely to be found. If the defiles are encumbered with *abattis*, or if the enemy has destroyed a wooden bridge, &c., the clearing and repairing of the road will occupy some time, and, perhaps, force will be required before it can be done. It is the duty of the officer commanding the advance-guard, to have relays of carts, cattle, &c., ready to replace those of the convoy which may have perished or become unserviceable on the road.

The danger of having the advance-guard a long way from the convoy, consists in giving the enemy's cavalry time to retire with ease, at the approach of the flankers, and, by a circuitous road, come back between the advance-guard and the convoy: this is remedied by having patrols with the convoy itself, which will carefully search the ravines and defiles debouching upon the road in front; and it is to be remarked, that there is almost always a village or hamlet at these openings.

The main body is subdivided into four detachments, viz., a reserve, the detachment of the centre, one at the head of the convoy, and one at the rear.

The reserve should be so organized that the detachments, at the centre, head, and rear of the convoy, should on no account have to leave their post (which would lay part of the convoy open to the enemy's attack), and be so posted as to enable the convoy to push on in order to attain a place of safety.

The detachment of the centre must be in sufficient strength to defend the convoy until reinforced, to maintain order, and to keep a careful watch upon the drivers and conductors.

The rear-guard is composed much in the same way as the advance-guard, and marches some hundred yards in rear of the carriages, reconnoitering the flanks, and, if necessary, breaking up the roads.

The flankers carefully search the country on either side of the road, extending themselves as far as the nature of the country will allow of their doing in safety.

The march of the convoy should be restricted to a moderate pace, so as to enable the several waggons to keep together. A halt is made from time to time, to rest the cattle, and bring up those lagging behind; but no regular halt should be made in the daytime, unless the day is very long, and then, if possible, in an open space. The cattle should not be unharnessed, but only refreshed standing, and care should be taken to keep the drivers near them; which is often very difficult, especially if the halt is made near a village. When marching, the drivers must not be allowed to stop their cattle to drink at a ford or stream, as this is apt to create disorder. If a waggon breaks down, it must be taken to one side, mended, and then fall in at the rear; but if too much damaged to be quickly repaired, it should be broken up, and its contents placed on the other waggons. If the convoy is in want of cattle or repairs, information should be sent to the officer commanding the advance-guard, that he may have workmen, &c., in readiness at the next village.

When marching through a defile, the heights must always be occupied in strength, to prevent a surprize, and the whole of it carefully reconnoitered before the convoy attempts to pass through. For want of taking some such precaution, a convoy proceeding from Vittoria to Mondragon, in 1811, was attacked by the Spanish chief, Mina, in the defile of Salinas, where he had remained for two days ambushed with two thousand men, and the greater part of the convoy was taken.

When on the march, the commander of the escort should observe the greatest secrecy, both with respect to the locality where he intends to park for the night and the road he purposes taking during the day, and no one should be informed of it, except the officers commanding the advance and rear guards; for there are, generally, numerous spies with a convoy, whose object it is to discover where and when the convoy may be attacked with advantage.

If a convoy consists of gunpowder or other inflammable matters, it should not be taken through any village or town, but a circuitous route should be preferred; in some cases, however, when this cannot be avoided, care should be taken to have all the fires put out along the line of march, more especially those of blacksmiths' shops.

When convoys are to be parked for the night, every precaution should be taken against a surprize.

The method of parking depends on the nature of the convoy: an open space, having a good communication with the high road, should be preferred; but if the country consists of ploughed fields, where the wheels would sink into the earth, and much time and trouble would be necessary to get them on the high road again, it would be better to park upon the latter.

When there is plenty of space, and a sufficient number of waggons, they can be formed into a circle, the shafts of each waggon being directed towards the centre, the cattle unyoked, and tied to strong pickets in front of each waggon. If there are not enough waggons to form a circle, a square can be formed, placing the waggons axle-tree to axle-tree, with their shafts turned inwards; this formation is perhaps the best, when there are a few pieces of artillery with the escort. In some countries, the carts, being excessively small, might perhaps not afford much protection by placing them axle-tree to axle-tree; a safer system would be, to lash the shaft of each cart to the body of the next in front, thereby forming one connected line: this is especially applicable to two-wheel carts.

If no space near the road can be found fit for parking, an oblong square may be formed on the road itself; but, in many cases, the breadth of the road would not allow of this: a good system then is, to make every other waggon, beginning at the head of the convoy, turn to the right or left, according to which side of the road it is intended to turn the shafts, and the intermediate waggons should have their shafts lashed under the body of those in front; by this means, a small space is left, between every three waggons, to place the cattle in, which prevents confusion. If the road is flanked by a river, or by steep, high rocks, it would very much strengthen such a formation.

Whatever formation is adopted, it should be remembered that all powder waggons must be separated from the remainder, and most strictly watched.

When the convoy is parked, the advance and rear guards form outposts on all the neighbouring heights, and strong patrols should be sent out by the reserve.

If, on the march, the commanding officer is informed of the approach of the enemy, he should assemble the greater part of his men upon the side which is menaced, and the waggons are formed two-deep, if possible; this is done, that, in case of attack, the enemy may have difficulty in getting between the waggons and cutting the traces of the cattle; the convoy is hurried on, and only parked at the last extremity. If the commander perceives, in front of him, a wood, a village, or a stream, which he căn make use of as a means of defence, he should increase the speed of the convoy, in order to reach the position as rapidly as possible.

If he be marching through a defile, and it is discovered that the enemy is in pursuit, the convoy should continue its march, and not be parked until after it has passed through the defile: in this case, the advance-guard, being warned, should fall back, and the rear-guard be reinforced. If the enemy attack the head of the convoy, it is most probable that a vigorous charge will drive him back; but if he occupy the heights forming the defile, there is no other alternative than to hurry on the convoy.

In general, every time that the enemy does not attack with very superior numbers, he should either be kept in check or charged very boldly, without waiting to park; during which time, the convoy marches on rapidly, and the rear-guard is reinforced.

If it be absolutely necessary to park the convoy, the first care of the commanding officer should be, to prevent the enemy from getting to the waggons; he must, therefore, post his men so as to effect this object in the best manner that the time and nature of the place will allow of. Most military authors consider that it is best for the troops to defend themselves from the interior of the park; and this measure, at first *sight*, appears very advántageous, as the infantry, when protected by a retrenchment of waggons, cannot receive much injury, and it is not easy to reach them: but it is difficult for troops, so placed, to make a proper use of their weapons; they are inconvenienced by the cattle belonging to the waggons, which crowd together at the noise of fire-arms; and the officers have but little influence over the men dispersed among the waggons. If, on the other hand, the escort takes up its position in front of the convoy, the troops will be free in their movements, and the cavalry well supported by the infantry; the enemy cannot then reach the waggons to set fire to them, and the escort, if driven back, can still take refuge within the park, and defend itself to the last extremity.

In most cases, however, the convoy will have time to reach a village, or some isolated houses, which would greatly strengthen the means of defence. The entrance to the village might be barricaded, by placing a few waggons across, and the infantry would fire from the neighbouring houses.

Whatever system of defence is adopted, the following maxims should be observed:—

1st. A strict watch must be kept over the drivers or muleteers; as, during the heat of the action, they might cut the traces of their cattle, or set fire to the convoy, and escape amidst the confusion; this is particularly necessary, when the means of conveyance are obtained by forced requisitions.

2nd. A strong reserve must be organized to assist any particular point which may be in danger.

3rd. If there is a body of cavalry with the escort, there must be an opening left in the park, by which it might make a sortie.

4th. If the convoy consists of powder, the escort must not take refuge within the park under any circumstances whatever.

There are cases when it is necessary to sacrifice part of the convoy to save the rest; for example: if, at the passage of a bridge or narrow defile, a numerous enemy is attacking the rear of the convoy, a couple of waggons, placed across the entrance, and their wheels taken off, would considerably delay the pursuit. In cases of great peril, it would be advisable to allow the enemy to pillage part of the convoy, whilst the remainder escaped; but, at all times, ammunition and provisions should be considered as the most important part of a convoy.

If, after a protracted defence, it be necessary to abandon the convoy, it should be burnt; for, by falling entire into the enemy's hands, it would entail a double loss.

If there be time to unharness the horses of part of the convoy, to put them to another which is more valuable, this should at once be done, but such an operation demands great coolness and self-possession; the commander should then endeavour to place his convoy in some village or wood, which would enable him to defend it until it could be put in proper order.

On the 24th March, 1814, General Pacthod, with two brigades of two thousand men each, and a division of eighteen hundred men, under General Amey, left Sezanne, to escort a convoy of eighty carriages laden with bread, brandy, and other necessaries, for the army under the Marshals Dukes of Trévise and Raguse. That same evening, he reached Etoges, where he obtained information of the marshals directing their march upon the Soude. He immediately sent an officer to obtain further orders from them, and made every preparation to reach them on the morrow. At day-break, he left Bergères, in the direction of Vatry, but, at ten in the morning, when he had reached Villeseneux, he received orders from the Duc de Trévise to remain at Bergères, where he was supposed to be. The officer entrusted with the order, had amused himself on the road, and, by an inconceivable fatality, this order was unaccompanied with any information respecting the movements of the enemy, who were then masters of Châlons, and in movement *behind* the Cosle. Had General Pacthod been aware of this, it is most probable that he would have saved his troops, by retreating on Fère-Champenoise, even had he been obliged to abandon his convoy from the fatigue of the horses; but, thinking there was no necessity for expedition, he halted to rest his cattle.

That morning, Blucher, having left General Woronzow's infantry at Châlons, had proceeded towards Bergères, with the corps of Langeron, Sacken, and Strogonow. On the heights of Bierges, General Korff, who commanded the advance-guard formed of Langeron's cavalry, perceived Pacthod's columns, and, turning off in that direction, soon appeared before Villeseneux. Pacthod at once formed order of battle, his right leaning on that village, and his left supported by Amey's division formed into one solid square; his convoy *en masse*. In this position, he resisted every effort of the enemy for an hour and a half. But the imprudence of carrying on such a lengthened contest, caused the total loss of the whole corps; this was admitted by General Pacthod himself; for at last, General Wassilczikow, attracted by the noise of the engagement, reached the height of Treçon, with four thousand horse of Sacken's corps; and this movement induced Pacthod to retire, which he did, *en echiquier*, as far as Clamanges, having formed his convoy on a front of four carriages. But here he was obliged to abandon it, in order to make an effort to save the escort; for Wassilczikow's cavalry was menacing his rear by the road of Pierre-Morains, and part of Korff's cavalry had entirely turned the convoy. Throwing two battalions into Clamanges, to keep the enemy in check, he unyoked the horses from the convoy to double the draught of his artillery. This operation was successful, and he was able to continue his retreat in security as far as Ecury-le-Repos. Here, again, he found his road to Fère-Champenoise cut off by a brigade of the enemy; but he at once turned off towards the marsh of St. Gond. He was, however, soon after overpowered by the Allies; though not until, of a force of six thousand men which he commanded, three thousand five hundred had fallen on the field of battle, and one thousand escaped through the neighbouring marshes.*

If the commanding officer considers, that, by taking some by-road, during the heat of an engagement, any one of the sections of the convoy might be saved, he should order it to be done.

If the convoy consist of beasts of burden, it is almost always possible to save some, by driving them through paths where the enemy would not like to follow.

From the foregoing observations, it is clear, that the defence of a convoy is difficult only when it is suddenly attacked by the enemy, or when the latter is accompanied by artillery and the convoy has none. The waggons at all times form a strong retrenchment against cavalry; and, if the attack is made on a road lined with ditches, the convoy has nothing to fear. In a defile, the enemy's infantry can roll down stones which will wound the horses and damage the waggons; but this will have no effect on an officer who preserves his presence of mind.

The defence of a convoy of prisoners presents evident difficulties in a flat country, where it may be attacked on all sides. The prisoners should be united in a mass, or made to increase their speed until some village or house be reached, where they can be shut up, and the approaches defended: a desperate defence can be made, as, without any scruple, the prisoners must be made to share the dangers of the escort.

Although, on many occasions, it will be absolutely necessary for an officer to order the convoy to be destroyed, he should previously ascertain that he has exhausted every means he had in his power for its defence.

---

* Hist. des Campagnes de 1814 et 1815, en France, par Général G. de Vaudoncourt, tom. ii.

ATTACK OF A CONVOY.

It is usually easy to succeed in this undertaking, and the soldier, animated with the hope of booty, always attempts it with ardour.

The best time to attack a convoy, is, when it is going through a defile, or up a steep hill; in the evening, when the convoy is about to park; or, when it is halted, and the cattle are feeding, or the greater portion of the escort asleep.

In attacking a convoy, it is absolutely necessary to make use of infantry. Cavalry, when alone, seldom obtain success.

The troops intended to attack a convoy, should be divided into three corps; the first, to attack the escort; the second, those who remain near the waggons; the third, to form a reserve. The first care should be, to disperse the escort, and prevent it uniting near the waggons. The assailants will, therefore, manœuvre so as to place themselves between the escort and the convoy; whilst a few men, detached for the purpose, will cut the traces of the horses, in order to increase the confusion.

When attacking a convoy in a defile, the assailants should endeavour to seize the leading waggons, and place them across the road, so as to obstruct the march of the remainder. It is very advantageous, in a defile, to debouch upon a convoy from several points at once. An attack of this kind requires the greatest possible vigour, to prevent the enemy from making a retrenchment with the waggons.

If the convoy has had time to park, the cavalry should surround it, harass the escort, frequently charge it, or, by a feigned flight, induce it to leave the park. The infantry should attack the troops which have remained for its defence, and, if possible, get underneath the waggons and set fire to them.

If all the troops of the escort are within the park, or if a desperate defence is expected, the assailants should appear to give up all intention of attacking it, but should take it by surprize as soon as it resumes its march.

The attack of a convoy, consisting of beasts of burden, evidently presents less difficulty, and, by acting vigorously, it is very easy to throw it into confusion. The frightened conductors, pressed between the animals, which on such occasions always crowd together and become unmanageable, will be unable to hold them, and if the defile be narrow, the convoy will either not advance at all, or very slowly.

When a convoy has been taken, information should be obtained from the prisoners, as to what part of the convoy is the most valuable. This should be taken away, and the remainder burnt. If there be not time to take away any of the convoy, or if the appearance of a support would render this operation dangerous, the whole convoy should be pillaged and destroyed.

The attack of a convoy of prisoners is easier for many reasons, as their endeavours to escape will divide the attention of the escort. The campaign of 1806, in Prussia, presents an example of the danger of not escorting prisoners with cavalry, and also shews what can be done, when firmness is added to valour.

A regiment of Prussian hussars had retreated, after the battle of Jena, to the neighbourhood of Erfürt; from thence to continue their march to Magdeburg. Lieutenant Helwig, the sole surviving officer of his squadron, was informed that the French were marching their numerous prisoners to Mayence, and that a column of them, numbering 8000 men, was being led to Erfürt under a feeble escort. Helwig, having obtained leave, from his general, to make an attempt for their deliverance, marched to the entrance of the defiles of Thuringia, upon the road from Eisenach to Gotha, and ambuscaded near Eichrodt, with eighty horsemen, in a wooded vale, from whence he could easily debouch on to the high road. Having thus taken up a position, he disguised a non-commissioned officer as a peasant, and sent him to Gotha, to obtain information respecting the convoy, which the man did with success. The convoy arrived near Eisenach, on the 18th of October: it consisted of 8000 prisoners escorted by four companies of infantry; and, although these were posted in a military manner, they were evidently too few to protect so many men. Helwig divided his men into three sections, and charged the escort. The commanding officer and his men did their duty; many hussars were killed; but the impossibility of uniting the escort, without, at the same time, abandoning the prisoners, rendered all defence useless; and the movements of the cavalry, favoured by the nature of the ground, were so rapid, that the escort was obliged to retreat to a neighbouring wood, and the prisoners were freed.

CONVOYS BY WATER.

The difficulties presented by bad roads, and deficiency of the means of transport, have induced many generals to prefer water carriage, when available, for the conveyance of convoys.

Convoys by water are escorted on the same principles as those by land, but, besides, particular precautions should be taken.

Each boat should be guarded by infantry, and armed boats should precede and follow the convoy. If the convoy is of any length, armed boats should also be placed at certain intervals.

If the nature of the country be such as to allow of cavalry being employed, it should follow a road as nearly parallel as possible to the river or canal; the villages and surrounding country should be fully reconnoitered, and communication with the convoy kept up by means of flankers.

Many localities require that the greater part of the infantry should follow the convoy by land, sometimes even on both banks, especially where rivers flow between mountains which have steep descents on to the river. This measure is the more difficult, that the current of such rivers is usually very rapid. The infantry can follow the boats but with difficulty; and the latter will be obliged to stop, to enable the former to come up with them. Without these precautions, however, the enemy would, by suddenly appearing on the heights, be able to fire at the men in the boats, and even sink them, by placing guns behind some projecting rock. The difficulties will necessarily vary, according to whether the convoy goes with or against the stream; whether the river is narrow or broad; the tides high or low; the bed of the river muddy or rocky; the season dry or rainy, &c.

The siege of Tortosa, by General Suchet, in 1810, forms an important study, with respect to the difficulties experienced in escorting convoys by water.

All the *matériel* for the siege was assembled at Mequinenza; and the difficulty was, to transport it to Tortosa. Two attempts were made to convey the heavy artillery by the Ebro, but the waters were so low, that both attempts failed. This was in the month of September, and the difficulties of land carriage, from the deficiency of roads, was so great, that the army was obliged to await the rise of the waters of the Ebro, before it could begin its siege operations.

On the 1st of November, the waters of the Ebro rose suddenly. Immediate advantage was taken of this circumstance, and all the remainder of the siege *matériel*, at Mequinenza, was embarked on seventeen barges. They started on the 3rd, at six in the morning, escorted upon both banks. Very soon, the rapidity of the stream, in spite of all that could be done to delay the march of the convoy, caused it to outstrip the escort. Below Ribaroya, it was attacked by seven hundred Spaniards, in a narrow defile. Forced to run aground, it threw itself on the right bank; while two barges, carried away by the current, fell into the power of the enemy. Some days *after*, the sudden fall of the waters again compromised this convoy, which the Spaniards harassed without ceasing; but, a large reinforcement coming up, the Spaniards were kept at a distance from the river, and the convoy reached its destination, after having lost two more barges.

On the 27th of November, thirteen barges, laden with grain, left Mequinenza, and descended the Ebro. The escort had preceded it, for fear of not being able to keep up with it; and, when starting, it was only protected on the left bank by sixty men of the garrison of Mequinenza. Six hundred Spaniards carried off this detachment; but the barges running aground on the opposite bank, and reinforcements coming up, the convoy was saved.*

---

* Belmas, Journaux des Sièges dans la Péninsule, de 1807 à 1814.

CHAPTER IX.

TOPOGRAPHY CONSIDERED IN A MILITARY POINT OF VIEW.

Of the several branches which constitute the art of war, that of reconnoitering a country is one of the most important, as its result enters into the combination of every military operation.

A reconnoissance of this nature consists—1st. In obtaining accurate information, by all possible means, as to the nature of all the principal local objects of a country and its resources; 2nd. In seizing, at a glance, all the advantages and disadvantages afforded by a position, occupied, or to be occupied, either previous to, or during an engagement.*

Good maps sometimes suffice to enable a general to form an outline of a plan; but, when it is required to regulate the details, or particular operations, it is necessary to be well informed as to the nature of the country where this plan is to be put into execution. Consequently, though a thorough knowledge of that part of the country where the campaign is actually carried on, may be sufficient for the generality of the officers belonging to the army; yet, to enable a general to adopt a plan of a war, or even only of a campaign, and effectually to counteract the projects of the enemy, it is necessary, not only that he should be acquainted with the nature of that part of the country which is occupied, but also with that which it is proposed to occupy, as well as those bordering it in every direction, so that he may be able to adapt his plans beforehand to circumstances, or apply them to the several possible suppositions.

---

* Lallemand, Opér. Sec. de la Guerre, vol. i., liv. 3.

When reconnoitering a country, the chief points which should attract an officer's attention, are the communications, obstacles, resources, and positions.

COMMUNICATIONS.

A high-road is, in most cases, a communication from one town or province to another; it is usually in good order throughout the year, and will almost always allow of two carriages going abreast. High-roads, in France, are generally from thirteen to sixteen yards in breadth; those in Belgium, from ten to thirteen; and those of Spain and Germany, from eight to eleven.

A cross-road, is a communication from one road to another, or from one village to another; it is usually narrow, and its breadth generally depends upon that of the carts or waggons of the country. In most parts of the Continent, cross-roads are almost impracticable during bad weather: from this it results that often a great deal of labour must be expended on such roads, before artillery can be conveyed over them.

Footpaths are only for men and beasts of burden.

In order to reconnoitre thoroughly a communication, it is requisite to find out where it begins, and where it leads to; the nature of its soil, whether stony, gravelly, or sandy; and whether its breadth is variable or always the same. The extreme breadth of field artillery carriages in the English service being 6 feet 5 inches, a road should be at least 7 feet broad, to allow a file of such carriages to go through it: generally, from three to four yards is required for a file of waggons to march with ease, and from ten to twelve for a double file. The turnings of roads often diminish when they come to bridges and villages, so that the waggons which may have been formed two-deep, have to march in single rank, and the troops likewise on a smaller front, thereby occasioning delay on the march; if this circumstance, therefore, should often occur, it must be noticed, otherwise the general, who may have calculated upon the time required for a body of men to arrive, would be disappointed and his enterprize perhaps fail. When a road is lined with hedges, trees, or ditches, find out their approximate dimensions, for there are many hedges so thick that they often change a road into a defile; deep ditches are also very inconvenient, as a column would then have great difficulty in extending itself on the sides of the road; they may also be made use of to conceal infantry, in order to drive back any attempts the enemy's cavalry might make during a retreat. Trees will break a charge of cavalry, and if any reason whatever prevents an army from marching on the sides of the road, a few trees cut down will also obstruct the enemy. In 1834, a force of 6000 men, sent from Mysore against the Rajah of Coorg, was fourteen hours going over five miles of road, owing to trees being cut down and laid across it.*

In Spain, Italy, and Hungary, there are roads which follow the windings of a coast, or of a river, and are bordered on one side by elevated rocks; a few hours' labour will interrupt the passage, either by rolling pieces of rock across, or by blowing up a portion of the road; it is seldom that such roads have not some path overlooking them; information should be taken as to this, for the skirmishers, or even the whole of the infantry, might make use of it, whilst the artillery and cavalry followed the road in the valley.

Inquiry should be made as to the number of rivers or streams the roads cross; what towns or villages they go through, or, are in their neighbourhood; whether the turns of the roads, in the mountains, are too sharp to allow of carts, drawn by several animals, being brought that way; this circumstance is usual enough where oxen are used for draught: there may also be other communications leading to the same place, and not far from it.

---

* British India, vol. ii., p. 210.

Cross-roads, which debouch from the main-road, may be convenient for ambuscades; it should be observed, whether it is easy to form new communications.

It is well to calculate the length of roads by hours of march, (for it is not always sufficient to know the distance from one point to another,) and to ascertain how long troops will be marching this distance; as they cannot go as fast in hilly or marshy country as in flat dry land. This system is, besides, safer than depending on measures of distance, which vary in all countries; whilst an hour of march is about the same everywhere.

Footpaths require to be reconnoitered with a great deal of care, especially in mountains or in forests; for the information obtained from the inhabitants of the country cannot be depended upon. Whether from ignorance or from private motives, they always pretend that these paths are impracticable: there are few of them passable for men which are not also passable for horses; of this, the passage of the St. Bernard, by the French army of reserve, and that of the Splugen, by General Macdonald, are remarkable examples. It is often by means of footpaths that an active enemy arrives where least expected; a shepherd, or a smuggler, who is aware of their importance, will point them out to the reconnoitering officer.

It should be observed, that roads of stony or gravelly bottom are the only ones which are good in all seasons, and that those which are exposed from the south to the north, are soon dried; roads that are closed in by hedges and woods, which cross marshy low lands, or follow the base of a chain of mountains, are always in a bad state during rainy weather, thereby requiring more cattle to draw the carts; roads which wind along the top of a ridge of hills, where they are easily dried by the wind, are always in good order.

In many countries, rivers afford a better means of communication than roads. It should be noticed, whether the bottom is stony, sandy, or muddy; if the bottom cannot be seen, information may be obtained from the boatmen or fishermen who frequent it; they will also be able to tell the depth at any place it may be desirable to know. If the breadth of a river cannot be accurately measured, it should be estimated as nearly as possible.* Find out, as accurately as possible, the rapidity of the current; whether the river is navigable; from what point and at what season; the height of its banks; which side has the highest bank; whether its approaches are convenient, as well as the communications which lead to them; whether there are any islands in the river—their size, their cultivation; whether they afford any protection to troops approaching them. Islands greatly facilitate the passage of large rivers: they divide the river into several branches, which offer less opposition to the formation of bridges than would be found in the entire breadth of the river, and, as they are generally covered with willows or brushwood, they conceal the landing of the troops required to protect the formation of the bridge. It was owing to the wooded islands of the Danube, that the French were enabled to cross that river at Enzersdorf, in 1809, a little below Vienna, and almost in sight of the Austrian army; yet the four branches of this river, taken together, are about a thousand yards in width.†

---

* The following very simple method of measuring the breadth of a river is given in the "Artillerist's Manual." Place yourself at the edge of one bank, and lower the peak of your cap till you find the edge of it cut the other bank; then steady your head, by placing your hand under your chin, and turn round gently to some level spot of ground on your side of the river, and observe where your eyes and the edge of the peak again meet the ground; measure this distance, which will be nearly the breadth of the river.

† Pelet, Camp. de 1809 en Allemagne.

In many rivers, the bed is often encumbered with rocks and shoals, which sometimes cause great inconvenience: inquiry should be made whether, at these points, there is not some other line of communication.

One of the most important points to be investigated, in the reconnoissance of a river, is the number and kind of boats employed upon it; and, by careful inquiry into this matter, an intelligent officer will be led to obtain information on many subjects, connected with the navigation of a river, which might otherwise escape his memory.

Barges on the Rhône, Danube, Vistula, Rhine, and other large rivers, are often of one and two hundred tons burthen; but, from the many shallows which are met with, they are either flat-bottomed, or draw very little water.*

Rivers that rise in mountains of any great elevation, are often subject to excessive inundations, and have always a rapid current, which makes a serious difference between conveying convoys up or down the stream. Thus, a steamer, going down the river Rhône, will make fourteen miles an hour, whilst, going up, it makes but four miles in the hour.

Streams, when wide and deep, are sometimes of great importance, and require as much care as rivers in the reconnoissance. It is particularly necessary to remark the mills that may be situated near them, such as flour-mills, saw-mills, forges, &c. These often make excellent posts, as it is usual to raise dams in order to work the mills, which thus present a double obstacle. It is necessary to find out whether the water can be cut off; whether, in keeping the sluices shut, an inundation above the mill can be occasioned, and to what extent; or if, by opening the sluices, it would be possible to destroy some ford below: it would also be desirable to ascertain whether, by means of a transversal ditch, the valley can be overflowed or the rivulet emptied. It is to such a ditch, constructed in 1813, that Bayonne owes one of the best means of defence of her retrenched camp.

---

* M'Culloch's Geo. Dic.

It is requisite to know what country towns or villages are situated near these streams, as it is always in their vicinities that ferries are established.

Bridges, on all rivers of importance, are generally of stone or iron, and, on small streams, of wood. Find out the nature of their approach; their width, depth, and solidity; whether it would be easy to destroy the first, or, at least, destroy the parapets. This last circumstance should be observed, when they are to be defended; as the parapets are useful to an enemy who may wish to force the bridge under cover of the fire from the opposite bank. Ascertain whether the planks of the wooden bridges can be easily removed, or whether they can, at least, be partly destroyed. A system of stone bridges, with the middle arch made of wood, has been adopted for the French frontiers.

It should be inquired, whether the debouches of the bridge are convenient; whether its head can be fortified. If the bridge is not isolated, notice should be taken of the street of the town or village leading to it. As the width of this defile may be important, it should be seen to; and inquiry should be made as to whether there is not a ford above or below the bridge, or, at least, the possibility of establishing another means of passage.

On many rivers where there are no fixed bridges, flying-bridges and ferry-boats are found.

It is desirable to know how many men, waggons, and horses, a flying-bridge or a ferry-boat can carry at one time; how long they take to cross; and whether the embarkation and debarkation are difficult or convenient.

A river which does not possess either of the above means of passage, may perhaps have fords.

Let it be ascertained what the bottom of a ford is composed *of.* Gravelly is the best; a sandy bottom gives way under the feet, and the troops are often obliged to swim across. What is its depth? A ford should not be more than from thirty to thirty-six inches in depth, for infantry, and forty inches for artillery; though there are many examples of fords having been crossed, which were four feet in depth; but, in such cases, there must be hardly any current.

Fords are of great importance, on many occasions, during a war: it is often by means of them that surprizes are effected, that the destruction of bridges becomes without effect, that a defeated army may be hotly pursued, or an escape made from a victorious enemy. We shall therefore enter into details upon this point, which is an important one—especially for artillery.

In summer, when water is observed to flow rapidly between two sandy banks, a ford may probably be discovered there, though the inhabitants be not aware of its existence: this may be ascertained by sounding, or by a man on horseback. These kinds of fords are newly-formed, and are generally consequent on a hard winter; they are usually unsafe, and of short duration.

Small rivers are generally fordable where they flow into the sea, and, often, at their junction with another river; because, as they approach their point of junction, they lose part of their rapidity, and deposit sand, gravel, &c., which they have carried along with them: hence, the bars which interrupt the navigation of rivers at the entrance of harbours.

When a bridge over a rapid stream has been destroyed, a ford will probably be found below the bridge; in a slow river it will be found above. In the first, the rapidity of the current, forcing through between the arches, hollows out the soil beneath, and, as it runs further down, this impetuosity lessens, and it deposes the sand or mud which it has carried off from under the bridge, and thus forms a ford: in the second case, the bridge stops the weeds, &c., brought down by the river, the soil accumulates, and raises the bottom above the bridge. It should be observed that the fords of sluggish rivers are generally safe and lasting, their banks being almost always of rock or clay, against which the waters have no effect, but their bottom is always of mud.

To render safer the passage of a ford that is frequently made use of, a stake might be fixed on the banks at each end, and a rope fastened across, which would serve as a rail.

The direction of some fords is not perpendicular to the banks, and is sometimes difficult to find: it should therefore be marked out by poles or stakes, to prevent any accidents in case it be required. There was a ford of this kind upon the Tagus below the bridge of Almaraz. Marshal Ney, having been ordered by Soult to find it, failed; otherwise he might have anticipated the Anglo-Spaniards at Truxillo, which would have cut off their line of retreat after the battle of Talavera: this ford is formed by a rocky bank, and is almost parallel to the side of the river.

Fords in mountainous countries, are seldom to be trusted to; for the least rain or melting of snow swells the streams, and the fords disappear; and even when the bed of a mountain stream or torrent is dry, it is usually so covered over with large stones as to be often impracticable for artillery and cavalry.

In the month of November, 1848, Lord Gough, encamped at Rámnugur, on the left bank of the river Chenaub, was desirous of driving the Seikh forces from a strong position which they occupied on the opposite bank. Finding that to force a passage in his front would be attended with considerable loss, Major-General Sir Joseph Thackwell was detached with orders to cross the Chenaub at Runnee-Khan-ke-Puttun, a ford thirteen miles distant from head-quarters. The Chenaub here consists of four channels, one beyond the other, and, as the sand-banks bordering and dividing these streams are insecure, the several streams being, besides, notorious for quicksands, Lord Gough had previously ordered this ford to be *reconnoitered*, and it had been reported to him as practicable.

When, however, Sir Joseph reached the ford, he ordered Lieutenant Paton, his acting quartermaster-general, to survey it; and, after a careful survey of three hours, one of the branches was declared to be very deep, with a shifting bottom. The consequences of the negligence in the first survey now began to be felt, for a fresh ford had to be sought, which, being at some distance, was not reached by the fatigued troops until near dark, when the passage was effected with great difficulty and confusion.

Canals are water-communications, usually found in commercial countries: they are made to connect two navigable rivers together, or along the bank of a river difficult of navigation, or for the purpose of draining a marshy country.

Canals are often of great use for the conveyance of military stores or provisions.

When reconnoitering canals, notice should be taken of the breadth of the paths along the banks; whether the paths are elevated above the level of the canal, and whether the trees along the path present any defence; whether the canal passes through rocky country; whether it is possible to produce an inundation, by destroying the locks or cutting the banks; what kind of barge is employed; whether the horses, used for the purpose of towing, are numerous.

OBSTACLES.

Forests are of infinite importance in warfare; they add to the difficulties of ascending mountains, they serve to conceal ambuscades, to screen the march of troops, or to support the wings of an army.

What is the extent of the forest? What roads are there, and are they fit for artillery? Are there any lakes or marshes? Are the ravines marshy? This often occurs in the forests of champaign countries. Are there any clearings in the forest, and what is their extent? Does the forest consist of high trees or copse? Is it sufficiently open for troops to move in, or is there any impenetrable jungle or bush? Trees will make good *abattis*, and if thickly planted, or much underwooded, cavalry will be prevented from penetrating into the wood.

Woods growing on sandy soil often possess many pools of water.

Are there any villages or large farm-houses within the forest where a convoy or a detachment may pass the night?

Small woods and copses are often surrounded by ditches, walls, or palisades; can these be of any use in defending the wood?

Marshes are generally found in very low lands, or in uncultivated countries.

Marshes are of two kinds: the first are of great extent, such as those along the courses of the Danube and Theiss in Hungary, on the shores of the Black Sea, the basin of the Priépec in Poland, Touraine in France, the Pontine Marshes, those at the mouth of the Danube, Po, and other rivers; marshes of this description are of strategical importance. The second are small swamps, found usually in sandy or heathy lands; and ignorance of their position often causes great disasters in a battle.

Of what extent are the marshes? Are they passable, and at what seasons? The inhabitants themselves are sometimes ignorant of roads which may be found by a vigilant officer or by accident: thus, at the battle of Biberach, where General Moreau engaged the Austrians, in 1796, General St. Cyr turned a column of the enemy with a regiment of infantry, which he led across the marsh of Moos Grunt, over ground considered impracticable.

In many countries, low lands are laid under water for the purpose of improving the land, or on account of particular crops, as rice: such land is generally very much intersected with small streamlets, which may be made use of for the defence of a position.

Lakes are reconnoitered like other pieces of water; they are numerous, not only in mountainous countries, but even amidst tracts of sand or heath.

There are, in the north of Germany, rivers, such as the Havel and Sprée, the beds of which, suddenly expanding, form a large basin; they return to their former narrow limits; then again, soon after, form a new lake: there are some remarkable instances of this kind near Potsdam and Spandau, which would check an enemy coming from Magdeburg. There is a very singular lake in Illyria, called the Zirknitzer-see. It receives its water through subterraneous channels; during the spring and autumnal rains, it presents a sheet of water four miles long and one mile broad; but, in summer, the water recedes, and leaves a dry fertile surface, upon which summer crops are cultivated.*

Mountains present a most important subject; and, though it cannot be treated in this work with the detail which it merits, yet we will endeavour to point out as many of the principal points connected with it, as may suffice for ordinary occasions.

A counterfort is that part of a chain of mountains or hills, which stands out from it, and is generally perpendicular to the direction of the chain; in the same manner that a counterfort in masonry is to the direction of the wall which it supports. Almost every chain of mountains throws off such counterforts, upon which villages are often situated. They are of great importance in the choice of positions, in a rugged and broken country; they are its real bastions, since they flank the most inaccessible places.

What is the direction of the chain of mountains? What roads lead through them? Are the roads passable? When does the snow usually make its appearance? What is the nature of the mountain range? Is their declivity sloping, steep, naked, cultivated, or woody? Do the valleys run parallel or transverse to the range of mountains? Are there any roads, rivers, or torrents, in the valleys? Are the streams or torrents easily crossed, and where? Are the mountains crested, or do they form table-lands? if so, to what extent? Can the roads in the mountains be rendered impracticable? how, and where? Are there any villages in the mountains? and of what extent are they? Wherever there is a village, there will always be one or more footpaths; and the torrents in the neighbourhood are generally passable by means of wooden bridges. Where do these footpaths lead to? and can a bridge be easily thrown across for the purpose of passing artillery or stores? Are the mountains frequented by herdsmen or smugglers? if so, what are their usual haunts?

---

* M'Culloch's "Geographical Dictionary."

What is the breadth and depth of ravines in hilly countries? Are the hills wooded, cultivated, or bare? Are there any morasses or marshes on the hills? if so, what is their extent? Do the woods or brushwood offer any obstruction to the movement of the troops? Are there any farm-houses, windmills, or streams, on the hills?

Hedges are often of use in strengthening a position, and even sometimes greatly influence the events of a whole campaign; as in the war of the Vendée, where a few peasants, armed with walking sticks and fowling pieces, successfully resisted the Republican armies.*

Few countries are so well defended by hedges as England, each field being surrounded by hedges of more or less thickness and height, and all roads being lined with them. Troops, marching along the roads, would have to be always on their guard against sharpshooters; and, in an action, the labour required to cut down the hedges and fill up the ditches, for the purpose of facilitating the movements of the cavalry and artillery, would be immense.

---

* Thiers' French Rep., vol. iv.

RESOURCES

The reconnoissance of the resources of a country is made with respect to—1st. Cantonments; 2nd. Provisions and necessaries for the troops; 3rd. Purposes of defence.

1st. *Cantonments.*—What is the number of houses, and of what size are they? What massive buildings are there? What is the facility of procuring water, and also the possibility of forming a hospital? Can a park be formed? and which is the best place for assembling the troops in case of alarm?

In countries where agriculture is carried on with horses, the people build their dwellings close to each other in villages; but where oxen are used, the slowness of these animals induces the people to live close to their own land.

In vine countries, the houses are generally small and congregated together, and are often built in places difficult of access, on slopes, &c.; they offer few resources to troops, their roads are narrow, and seldom good.

In countries where farms are of large extent and in the hands of a few individuals, the farm-houses are always of a good size, and well stored with forage.

Isolated inns, with large courtyards and stables, well supplied with water and other necessaries, are found in provinces where, villages or towns being at a distance from one another, and a good deal of internal traffic going on, the necessity of such buildings has been felt. Such inns are found in Spain, Transylvania, and the northern part of Turkey.

2nd. *Provisions.*—What are the products of the country around? their exact quantity, or nearly so, and the facility of getting them together?

With regard to cereal crops, it should be remembered, that elevation is equivalent to latitude, as far as temperature is concerned; that is to say, that richness of vegetation diminishes in proportion to the elevation of land.*

What animals does the country possess for draught or food? Find out the number and situation of the flour mills, the ovens, and how many rations can be cooked in them in twenty-four hours. During this period six distinct bakings may be made in the same oven, and, as a thousand pounds of flour will make twelve hundred pounds of bread, it can be easily calculated how long it would take to obtain bread for a given number of men.†

Enquiry should be made as to the number of waggons or carts of any kind; how many men or what amount of stores they can carry; the market days; the number and abodes of saddlers, farriers, and wheelwrights. A great deal of information relative to those points can be obtained from the local authorities; but its correctness should be well ascertained.

3rd. *Purposes of Defence.*—Of what nature are the buildings? are they of brick, stone, wood, &c.? In many parts of France and Germany, houses are constructed of wood; in Artois, Picardy, Aragon, and Catalonia, they are of clay, thatched with straw; such habitations are of scarcely any use for the purposes of defence. In French Flanders, Belgium, and England, towns and villages are generally built of brick: the walls are easily pierced with loopholes; and fire is not dreaded; the defenders suffer but little from splinters, and, in this respect, such houses are better than those which are built of stone.

Are the houses isolated or together? and are they overlooked by neighbouring houses?

---

* "Physical Sciences" by Mrs. Somerville, sec. xxvi.

† Dr. Ure, in his Dictionary of Arts and Manufactures, states, that the Paris bakers obtain 127 lb. of bread from 100 lb. of flour; but it cannot be expected that, with the rough baking in the field, it can be made to swell out to the same extent as a baker having every convenience *might* make it do.

Many small towns have remains of old walls: can these be made any use of? Is there any position where a small redoubt may be constructed for the refuge of troops in event of an attack?

It seldom happens that the church and churchyard of a village do not present a favourable point for defence; for churchyards are generally walled round, and churches may be pierced, or scaffoldings erected for firing from the windows.

Is there any large country house or farm-house, where troops can be concentrated?

Examine the nature of the surrounding country; the facilities it may offer to an enemy invading the cantonment; the means of resistance afforded by gardens, orchards, &c.; the best direction for hasty retreats; the best manner of communicating by signals with the neighbouring cantonments.

POSITIONS.

A position is ground of any kind, occupied by an army, either to encamp, bivouac, or rest, or presenting to any number of troops the means of engaging with success even against a superior force.

Positions selected for an encampment should be on dry ground, with wood and water close at hand. The water should be of good quality, and in sufficient quantity to last as long as the troops occupy the spot, whilst provisions and forage should be easily obtained within at least a day's march.

Castrametation, or the science of tracing out an encampment, consists in determining how the several branches of the service should encamp, so as to afford each other mutual support; and this will, of course, vary according to the nature of the ground. The carrying of tents adding greatly to the baggage of an army, troops sometimes erect huts which are formed in the same manner.

If the country is excessively dry and sheltered, and the position is to be occupied but for a short time, the troops bivouac. The arms being piled, fires are lit in rear of them, at the rate of eight or ten men to a fire. If there is any chance of being surprized, the horses remain saddled all night, and both infantry and cavalry fall in at their posts at daylight. It has been proposed that a soldier should carry a very fine piece of canvas, with four pegs, under which he might sleep, so as to be sheltered from the rays of the moon, which, in some countries, are extremely hurtful, and from the dew. Napoleon, who merely looked to the rapidity of his movements, strongly encouraged the bivouac. "Tents are unwholesome," he said; "they point out to an enemy the outlines of the position; soldiers should sleep with their feet to the fire, at the bivouac; a little straw, or a few branches, will shelter them from the wind." Yet many generals prefer the inconvenience of tents and huts, to the ravages caused by the exposure of the bivouac.*

The choice of positions taken up by an army previous to an engagement, varies according to the object in view, and it is very necessary not to give way to the widely-spread prejùdice, which causes positions of a steep and difficult access to be generally preferred; for, though such positions, when taken up for the purpose of passing through a country, crossing a river, &c., may be the best, they are not always so for an engagement. In fact, a position is not strong merely because the ground it occupies is steep, but when it is adapted to the object which is to be achieved, and when it offers the greatest possible advantage to the movements of that branch of the service which constitutes the principal force of the army.†

The following maxims should be strictly observed with respect to positions:

---

* Manuel Général du Service des Etats-Majors, par le Baron Thiébault, Général de Division. Aide-Mémoire, par J. Laisné, Capitaine de Génie.

† Jomini, Précis de l'Art de la Guerre, vol ii. ch. iv.

1st. An army, occupying a position, should have easier debouches to attack the enemy, than the enemy should have to approach the position.

2nd. No part of the ground should be secure from the artillery fire.

3rd. It should possess ground advantageous for the purpose of concealing any movements which might be made from one wing to the other, so that troops could be sent to succour any point, as it might appear necessary.

4th. On the other hand, the movements of the enemy should be easily discovered.

5th. The rear of the position should offer an easy retreat.

6th. The flanks should be well supported, so as to render an attack upon the extremities impossible, and force the enemy to attack the centre, or, at least, the front of the position.

7th. In a defensive position, not only the flanks should be protected, but, if possible, the front; to effect this, the smallest natural obstacle will suffice; thus, at Waterloo, the streamlet of Papelotte forced Ney to attack Wellington's centre, instead of the left, as he had been ordered; and the small space of boggy land at Meeánee prevented the British horse from turning the right flank of the Beloochees.*

When the front or flank of a position cannot be covered by natural obstacles, or where it is required to add to their number or their strength, entrenchments are formed, and recourse is had to *abattis*, inundations, &c.

It should be remembered, that a position ought to afford every facility to the movement of the troops, and openings of communication should accordingly be made through the hedges, ditches, boggy ground, &c. Negligence of these precautions led to the defeat of the Austrians at Dresden, 27th August, 1813. Prince Schwartzenberg having extended the left of his army beyond the narrow valley of Plauen, which runs along high peaked mountains, Napoleon ordered a strong force to occupy the bridge of Plauen, the only point of communication between the left and centre of the Austrians, and cut the former to pieces.

---

* Jomini, Précis de l'Art de la Guerre, vol. iv. Napier's Scinde, part 2.

Farms and country seats, isolated houses, which are often found on the slopes of hills, are excellent means of defence to the approaches of a position.

Villages are excellent supports; their winding streets, their general irregularity, their orchards, &c., render it difficult for an enemy to scan them quickly: in plains that are wanting in natural obstacles, they are particularly useful.

The following memorandum* of the Duke of Wellington is a good example of the preceding observations.

1st. When the French corps under Victor and Sebastiani shall join near Toledo, and be reinforced, probably, by the French garrisons in Toledo and Madrid, is there any defensive position they could take up? Is such a position afforded by the Guadarama or the Manzanares, throwing their left on the Tagus?

2nd. What is the nature of the country between the Guadarama and Manzanares? What the nature of the banks of those rivers, particularly that of the upper part of the former? What is the nature of the banks of the Tagus between them? Any fords, or other passage?

3rd. Are there any roads leading from Placencia or Talavera, and of what description, to the upper part of the Guadarama?

4th. Supposing the enemy to retire beyond Madrid, upon being threatened with an attack by the three combined corps under Generals Cuesta, Venegas, and myself, could the mountains of Castille afford him any defensive position?

5th. What position would be most probably taken up by the French army, in those mountains?

6th. What are the commonly used passages through them from the southward, in the whole extent of their range?

---

* Wellington Despatches, vol. iv.

7th. What is the nature of the country on this side, and of the different passages through them?

8th. What is the nature of the country after passing them?

9th. Supposing the enemy to retire at once to the Ebro, and take up his position upon that river, his object would be, most probably, to secure his communication with France; with that view, what position could he take up?

10th. Is the Ebro fordable in the whole length of its course?

11th. Where are the principal passages?

12th. The nature of the banks generally?

13th. The nature of the country on both sides?

14th. What Spanish corps are there in Valencia, Murcia, Aragon, and Catalonia, which might be brought to co-operate in a general movement upon the enemy?

CHAPTER X.

STREET FIGHTING.

The attack and defence of open towns has, of late years, become an important feature in warfare, and the numerous examples afforded by the continental revolutions have enabled governments to decide on what course should be pursued on such occasions.

The subject unfolds itself to view in three several ways:—1st. When a city is defended by the entire population, acting unanimously together, to repel a foreign invader; 2nd. When the inhabitants of a city rebel against the Government; 3rd. When the insurrection is partial, and confined to small districts of a town, or to certain classes. In the first two cases, force may have to become subservient to policy,—a circumstance which we will endeavour presently to enter into more fully; in the third, indecision is fatal, and the incipient germs of rebellion must be at once extinguished by an overwhelming force.

OF A CITY DEFENDED AGAINST FOREIGN INVADERS.

Although any group of houses, energetically defended, will offer a serious obstruction to troops, yet, for such a defence to be of any permanence, it must, besides the energy of its inhabitants, possess certain natural advantages. The generality of the houses, and all the public buildings, must be sufficiently substantial to offer a certain amount of resistance to artillery; whilst, to prevent the disastrous consequences of conflagrations caused by a bombardment,* it is requisite that there should be an absence of all combustible matter, such as thatched roofs, wooden buildings, &c. Few towns, however, are susceptible of protracted defence, unless they command a plain, or lean on a river.†

If the suburbs consist of country houses, factories, garden-walls, hedges, &c., they should be connected together by palisades, stockades, earthen parapets with ditches, and *abattis*, &c. All communications, between the town and expected succours, are rendered as easy as possible, whilst those which might favour the approach of the enemy are obstructed in every way that can be devised.

If a town is surrounded by an old turreted wall, a banquet should be raised all round this wall by means of scaffolding; all gateways or other entrances which are not requisite are blocked up, whilst those which are to be kept are protected by traverses or field-works; the streets are barricaded, and cuttings made across them in rear of these barricades, which usually consist of plankings filled with earth, dung, stones, bales of wool or cotton, &c., fastened down with stakes, fascines, hurdles, &c.; or of waggons and carriages, likewise filled with earth or dung, and their wheels taken off; or of palisades, stockades, iron chains, &c. But, of whatever materials barricades are formed, they should be able to oppose a resistance of some duration to the enemy's artillery.‡ The houses flanking these barricades should be loopholed: it would be well, therefore, to erect barricades between houses which could afford good flank defence. If the town possesses any squares, or open ground of any sort, which the enemy, having once penetrated into the town, could make use of, in order to form, previous to any further attempts, every house commanding the debouch into this square should be loopholed, so as to cross a heavy fire upon it. One or more public buildings should be rendered capable of a protracted defence, and the communications with these must be kept open. Such buildings are defended by having every approach to them barricaded; loopholes are made about four feet from the ground of each floor, especially at the angles; if the building can be surrounded with a ditch, or the ground floor is lofty, loopholes are likewise made in it; but they must be sufficiently high to prevent the enemy choking them up: and a banquet is made within of planking. The windows are blocked up with double beams, loopholed; the balconies or other projections are transformed into machicoulis. An interior defence is made from room to room, and passage to passage, by loopholing the interior walls as well as the floors. The stairs are cut off, and the communications between one floor and another kept up by means of ladders. Paving-stones, logs of wood, and other missiles are taken to the top story. If it is expected that artillery will be brought to bear against the building, the principal girders are propped up, so that the breaches may not cause extensive crumblings. The doorways required to be kept open for sorties, should be strengthened by traverses of palisade or tackle, the entrances to which are closed with a strong barrier, or *chevaux-de-frise* turning on a pivot. If requisite, the building is flanked by traverses, which communicate with it by openings made in the walls. Neighbouring houses, which would inconvenience the defence, or which would afford any advantage to the enemy, must be rased, and any trees or hedgerows which would shelter an attack, be cut down.

---

* Napier's Peninsular War, book v. chap. iii.

† Aide-Mémoire du Génie, par J. Laisné, p. 536.

‡ Ibid. p. 293.

Previous to attacking a town defended in such a manner, it would be well to weigh whether its reduction could not be effected by cutting off its supplies, and forcing the inhabitants to surrender through the effects of famine; and whether the advantage attending the reduction of it by force, would counterbalance the enormous losses of life which the besieging army must inevitably encounter. If, however, force is determined on, a general should remember that his first consideration must be the preservation of his own troops, and no mistaken, views of humanity should induce him to sacrifice their lives, in order to spare those of the enemy.

All communication being cut off between the townspeople and the neighbouring country, by strong detachments and moving columns, the main body of the besiegers will carry on the siege as much as possible under cover, house by house, and street by street; and, to prevent any unnecessary sacrifice of life, all open attacks which have not for their object the carrying out of these measures, should be carefully avoided.* Shells are thrown into the town, to set the houses on fire and intimidate the inhabitants. No barricade or stoutly-defended dwelling should be stormed without being previously destroyed by artillery; and if a building is substantial enough to resist artillery, or else the latter cannot be brought to bear against it, it should be undermined and blown up.

With respect to the attack and defence of open towns, the second siege of Zaragossa cannot be too carefully studied.

Situated on the right bank of the Ebro, it was connected by a stone bridge with a suburb on the opposite side. The immediate vicinity is flat, and, on the side of the suburb, low and marshy. The small river Huerba, running through a deep cleft, cuts the plain on the right bank, and, taking its course close to the walls, falls into the Ebro, nearly opposite to the mouth of the Gallego, which descends from the mountains on the opposite side, cutting the plain on the left bank. The convent of St. Joseph, built on the right bank of the Huerba, covered a bridge over that torrent; and, at the distance of cannon shot, a step of land commenced, which, gradually rising, terminated at eighteen hundred yards from the convent, in a hill called the Monte Torrero. On this hill, which commanded all the plain and overlooked the town, several storehouses and workshops, built for the use of the canal, were entrenched. The canal itself formed a water carriage, without a single lock, from Tudela to Zaragossa. The city, surrounded by a low brick wall, presented no regular defences, and possessed very few guns in a state fit for service; but the houses were strongly constructed, some of stone, others of brick; they were mostly two stories high, each story being vaulted so as to be nearly proof against fire; and the massive walls of the convents rose, like castles, all round the circuit as well as inside the place.* Through the centre ran a broadway called the Cosso, the greater streets on each side running into this broadway, and dividing the town into a variety of districts, unequal in size, but each containing one or more large structures.†

---

* Journaux des Siéges dans la Péninsule, par Belmas. Tom. ii., pp, 226, 249.

The actual siege of the town differed little from that of any other fortress; but, when the enemy had rendered a breach practicable, and the assault had been successful, the besiegers suddenly found themselves as it were, but at the commencement of their labours. The regular defences had given way before their efforts; the exterior walls were destroyed; but, on falling, they had only displayed the further defensive measures of the garrison. Resolved to defend their ground inch by inch, the Spaniards had made broad cuttings across their streets, and loopholed all the houses. The palaces, the convents, and the principal dwelling-houses, had been transformed into so many citadels, and were occupied by garrisons fully provided with arms, provisions, and ammunition. The citizens, sacrificing all personal convenience, and resigning all idea of private property, gave up their goods, their bodies, and their houses, to the war; and, being promiscuously mingled with the peasantry and the regular soldiers, the whole formed one mighty garrison, well suited to the vast fortress into which Zaragossa was transformed. The streets giving on to the Cosso were defended by traverses armed with artillery. The walls which faced them were loopholed, and large openings, broken through the party walls, facilitated the communications. Each edifice, each dwelling, became a citadel, and the thickness of the ramparts of Zaragossa had to be measured by the whole space of ground which the town covered.

---

* Napier's Peninsular War, book i. chap. v.

† Ibid. book v. chap. ii.

To attack a town defended with such desperation, required patience and intrepidity; and the French commander, to spare his men to the utmost, and to prevent their being intimidated, carried on his operations as much as possible under cover, slowly, but surely. The sap and the mine were put into requisition, whilst breaching batteries were erected as against a fortress. As soon as a house was conquered, it was retrenched and loopholed; large openings were made in the partition walls, so as to open a communication the whole length of the front; the doors and windows were blocked up with bags filled with earth; and each house thus became a point of support for further operations. If the enemy disputed the entrance to a room, loopholes were opened facing his, and firing was kept up on both sides; the room which separated the combatants soon became full of smoke, and then a sapper, gliding full length until he reached the feet of the defenders, sprang up suddenly, and, with a heavy iron bar, struck the points of their muskets upward; the grenadiers, following him, blocked up the enemy's loopholes, after having thrown hand-grenades through them; and this forced the besieged to retreat into a further room, where the same tactics were repeated. These attacks had to be made simultaneously on each floor, to prevent the enemy firing through the floors on those below, and sending down grenades by the chimneys. It was especially necessary to occupy the roofs in force, to prevent the Spaniards making sorties on to the rear of the besiegers, throwing stones, firing through the windows and from the cellars, and cutting off the communication. But of all the means of attack, the mine was found to be the most serviceable, as long as the charges were merely sufficient to open the houses, and not strong enough to throw them down; for it was requisite to keep part standing, so as to afford a shelter from the plunging fire which was directed from the neighbouring houses. The Spaniards, however, covering the timber-work with rosin and pitch, and filling up the windows and doors with faggots dipped in pitch and tar, set these on fire, which left between them and the besiegers a barrier of flames. As there was but little wood in the construction of the houses, and as the ceilings were formed of arched bricks upon small beams, the conflagration spread but slowly, and formed, often, for several days, an insurmountable obstacle, which afforded the Spaniards time to fortify and prepare defences for houses in rear of those burning.*

For twenty-three days was this tremendous warfare carried on, but the energy of the inhabitants was unable to resist the efforts of regular troops, and Zaragossa was finally reduced.

This siege affords a remarkable example—1st, of what a body of citizens can do, in defence of their country: 2nd, that irregular troops can never successfully oppose regular troops.

Sir William Napier, in his History of the Peninsular War, remarks, that it would be a great error to suppose, that any town, the inhabitants of which were equally resolute, might be as well defended. This is true; but the events of a war often depend upon circumstances so slight, that, to withstand an enemy for even one day, may prove sufficient for effecting his destruction. No fortress can eventually withstand a regular siege, much less an open city; and all that can be expected is, that the enemy should be delayed in his operations a sufficient length of time to enable the army to form and attract his attention elsewhere, or force him to raise the siege. But the time thus gained is often of the utmost value, and may decide the fate of a war. Had Paris held out forty-eight hours longer, in 1814, the fate of the French empire might have been changed. In Portugal, the peasantry, destroying their crops and abandoning their dwellings, left the French army but a desert to campaign in. At Moscow, the citizens gave up their houses and goods to the flames; and, at Zaragossa, taking advantage of the solidity of their buildings, they opposed force to force.

---

* Napier's Peninsular War, vol. ii. Belmas, Journaux des Siéges dans la Péninsule, tom. 2.

Had the Spanish people partaken of the enthusiasm displayed by the Zaragossans, it would not have allowed that city to be besieged for two months, and, at last, totally destroyed; fifty-four thousand of the inhabitants having perished through the sword and pestilence. But though unsuccessful, the defence of Zaragossa was not without its fruits, for from the ruins of that city arose the spirit of independence, which so entangled the French forces, that they were never able to accumulate their strength against the British troops.

The siege of Tarifa, in 1811, was also conspicuous for its internal defence. A small town of three thousand inhabitants, surrounded by a very old Gothic wall flanked with towers, it stands on a promontory forming the southern extremity of Spain and Europe. The wall was soon breached; but Captain C. F. Smith, the chief engineer, as soon as the point intended to be breached was ascertained, adopted every possible measure to retrench it, or render the entry difficult. There being a difference of thirteen feet between the level of the rampart and of the street, the space within was kept clear from rubbish, and covered with strong iron gratings taken from the windows of the houses, having the intermediate bars broken and turned up. Every street communicating with the rear of the breach, was blocked up with defensive traverses; and the houses in its vicinity were loopholed for musketry, and furnished with hand-grenades. Similar precautions were also perfected in rear of every point of the wall likely to be escaladed; so that the garrison might defend every house and every street, and, whereever attacked, finally concentrate in the substantial and lofty castle of the Guzmans, which closed up the gorge of the town. The enemy attempted an assault, but failed, and, perceiving that a severe loss would be sustained in the endeavour to overcome such difficulties, raised the siege.*

ATTACK OF CITIES IN A STATE OF INSURRECTION.

The inhabitants of a city may be unanimous in their rebellion against a government, or it may be confined to a small portion of the citizens, occupying certain districts of a town.

In the first case, it would be expedient to have recourse to negative measures; for civil war is at all times of so terrible a nature, that it must ever be an important object to avoid the consequences of a conflict, which is the more to be dreaded in such cases, that, even if the troops be successful, a bitterness of feeling is left behind, which is seldom if ever eradicated. But, whatever measures be adopted, troops must on no account whatsoever be brought into collision with the insurgents, unless in sufficient force to put down effectually all resistance: the best plan, therefore, when the garrison is not sufficiently strong, is to cut off all communications between the town and the neighbourhood; as, the population requiring constant and daily supplies of provisions from the country, the interruption of the communication would so distress the town, that the strongest in the field must eventually have the advantage. This was the plan proposed by the Duke of Wellington,† in 1819, during the great riots of Glasgow; and General Cavaignac‡ stated, in

* Jones' Journal of Sieges in Spain, vol. ii.

† Sir F. B. Head's Defenceless State of Great Britain.

‡ Speech of General Cavaignac in the Moniteur, Nov. 26, 1848.

1848, with reference to the insurrection in Paris, that had he not had an enormous military force, he would have considered it prudent to retire from that city. General Schreckenstein, the Prussian Minister of War, in 1848, is likewise said to have recommended the same plan for the defence of Berlin.* Indeed, any attempt to defend a town, with an inferior force, can be attended only with defeat and ignominy.

When the insurrection of July, 1830, broke out in Paris, the garrison consisted of no more than 11,550 men. The events of the 27th being considered as merely a popular commotion, part only of these troops was called out, on that day, at half-past four, P.M.; but returned to their barracks that night. Strange to say, nothing more was apprehended; yet, by eight o'clock in the morning, the mob had attacked and disarmed the detached guard-houses;—the arsenal, the powder magazine, the canteen and cooking-house of the Guards had been captured; 1100 *fusiliers Sédentaires* had been disarmed; and the Hôtel-de-Ville, with the space in front of it, had been taken possession of by the people.

At nine o'clock, the troops were again called out, and 1300 of the Guards, three squadrons of lancers, and eight guns, formed line on the Place du Carrousel. Two Swiss battalions, numbering 800 men, were in the Place Louis XV. Three regiments of the line, giving about 3300 more, occupied the Place Vendôme, with the Boulevards round to the Bastille, and kept up the communication with the Cuirassiers of the Guard, 400 strong, who were quartered in the barracks of the Célestins, between the Bastille and the river. 1100 infantry guarded the Place du Panthéon and the Palais de Justice, on the south side of the river, and the Place de Grève and Hôtel-de-Ville on the north side; finally, 500 infantry and three squadrons of horse grenadiers occupied the Champs Elysées.

---

* Aide Mémoire, Art. Street Fighting.

It was evident that this force was totally inadequate to put down some 60,000 insurgents; yet Marshal Marmont made the attempt. At a quarter-past nine he ordered a detachment of fifteen men to proceed from the Tuileries, and reconnoitre whether the Panthéon, the Palais de Justice, and Place de Grève, were occupied by the line; this small force would, however, have been destroyed, had not a battalion of 220 men been ordered, a quarter of an hour later, to make a similar reconnoissance. Advancing along the quays, this latter body marched onward to the Pont Neuf, but, instead of crossing there, proceeded to the Pont au Change. This fortuity saved the detachment of the fifteen men, which, on its arrival at the Place de Grève, had found it occupied by the mob, and was forced to retire with the loss of one killed and five wounded. In its retreat, it happily fell in with the battalion, and the two parties returned to the Tuileries.

Marmont's design appears to have been, to occupy in force the Champs Elysées, the Tuileries, the École Militaire, the Panthéon, the Palais de Justice, the Hôtel-de-Ville, and the interior Boulevards, the occupation of which latter would protect several empty barracks. The defence of the Palais Royal he confided to a battalion of the Guards; but this force had to keep a communication on one side with the Bank, in which 100 men were posted, and, on the other, with the Louvre, by the Rue du Coq, and other streets in that direction. As the outline of a plan for the defence of Paris, it was very good; but the Marshal had totally forgotten that the plan should be conformable to the number of troops at his disposal, and that, by endeavouring to preserve every point, he was merely disseminating his small force, and giving them up an easy prey to a resolute mob. But even these dispositions did not satisfy Marmont; he was further anxious to keep open the great perpendicular communications which cross Paris from the Porte St. Denis to the Panthéon, through the great streets of St. *Denis* and St. Jacques, and from the Tuileries to the Boulevard, through the Rue de Richelieu, as well as two interior lines parallel to the river, through the Rue St. Honoré, and the Marché des Innocens, and along the quays and Places du Châtelet and de Grève, to the Place St. Antoine at the extreme east of the town.

In the course of the morning, Marmont was informed of the disaffection of the 15th foot, which had not occupied the Hôtel-de-Ville and Place de Grève, and shewed no disposition to do so. It was then time to concentrate the Guards; but, instead of this, he formed them into four moveable columns. The first, consisting of one battalion, two guns, and two squadrons of horse grenadiers, was to move from the Champs Elysées to the Church of the Madeleine, thence follow the Boulevard as far as the Rue de Richelieu, and return to the Champs Elysées.

A second column, consisting of a battalion of Guards, two guns, and three squadrons of cavalry, was to follow the Rue de Richelieu to the Boulevard, then, turning to the right, follow the line of the Boulevards to the Porte St. Antoine, and thence return back, by the Rue St. Antoine, to the Hôtel-de-Ville, of which another column, marching by the quays, would be already in possession.

Two other battalions of Guards, two guns, and thirty gendarmes, were to proceed to the Marché des Innocens; thence, one of these battalions was to diverge to the left, up the Rue St. Denis to the Porte St. Denis, and return to the Marché des Innocens, where the second battalion, which in the meantime was to diverge to the right as far as the Place du Châtelet, should have returned to meet it: this whole column was then to wait in that position for fresh orders.

Finally, a fourth column, consisting of one battalion of Guards, a half squadron of lancers, and two pieces of cannon, supported by the 15th light infantry, was to maintain the Hôtel-de-Ville.

Thus the Marshal would have involved all his troops, at an immense distance from each other, and without the possibility of mutual co-operation and support; and, besides, involved them in the most intricate parts of the city, in narrow and crooked streets, between rows of houses of great elevation, in the midst of a dense population of a most enterprizing character: whilst he left ungarrisoned the important parts of the town; that is to say, the Louvre, the Tuileries, and the Champs Elysées.

Let us now follow up the march of the four columns.

I. The first column, which marched from the Champs Elysées, advanced, about noon, down the Avenue Marigny, through the Rue St. Honoré; and, on reaching the Rue de la Madeleine, disarmed a small body of National Guards posted at the *Mairie* of the first Arrondissement. On turning up the Rue Royale, it was assailed by a very sharp fire from the Church of the Madeleine; and the officer commanding, ordered the light company to advance, which forced a barricade formed of the planks and scaffolding that surrounded this unfinished work, and put its defenders to flight. The communication of the Boulevards was opened, and maintained by detached posts, and these troops remained all day in these positions without any further opposition.

II. The second column, which was to reach the Boulevards through the Rue de Richelieu, advanced without encountering any hostility, till it reached the Porte St. Denis, when a few shots were fired at it. The officer who commanded this column, left, at the Porte St. Denis, a detachment to await the battalion which was to come up the Rue St. Denis, and continued his march with the remainder, towards the Place de la Bastille. Near the Porte St. Martin, however, he was assailed by a sharp firing; he countermarched his cavalry behind his infantry, and the latter, thus unmasked, fired by platoons; the artillery fired also two rounds, and the column broke through the barricade which the people had just begun to erect across the Boulevard. Continuing his patrol to the Place de la Bastille, he there deployed his troops; but, having been informed that several barricades were forming in the Rue St. Antoine, through which he had been ordered to return, and taking into consideration that his artillery could not fail to embarrass him by the delays of getting it over these impediments,—convinced, moreover, of the utter inutility of these military promenades, which, even if successful, could lead to no result,—he came to the resolution of returning to the Tuileries by the southern Boulevards, and, for this purpose, he crossed the river at the Pont d'Austerlitz. He left, however, a detachment of cuirassiers on the Place St. Antoine, with orders to proceed to the Hôtel-de-Ville and acquaint the fourth column, which had been ordered to occupy it, not to expect the column from the Boulevards.

III. The great street of St. Denis runs from the Porte St. Denis, on the north Boulevard, due south to the Place du Châtelet, a kind of square whence the Pont au Change crosses the river. About three-fourths of the way down, this street is intercepted by the great market-place called *Des Innocens*, the east side of which is formed by the east side of the street; so that the eastern end of the market looks up and down the street St. Denis. The third column, which had been ordered to occupy the Marché des Innocens, was there received by a sharp fire, particularly from the windows, from which also stones, tiles, furniture, and other missiles were thrown on the troops; but the fire of the latter soon silenced that of the people on the Place, and that moment was taken to detach the first battalion (according to the original arrangement) to the Porte St. Denis. This column met the first barricade opposite La Cour Batave, a large old edifice, with a court-yard and iron railings—a very little way up the Rue St. Denis from the Marché des Innocens; it got over this obstacle without difficulty, but had to pass through the fire of the people who lined the iron railings and the windows of La Cour Batave. The General commanding the column remained stationary in the Marché des Innocens with the other battalion, instead of marching, as he had been ordered to do, down the Rue St. Denis, to the Place du Châtelet. He thus varied from Marmont's orders; but, had he placed his guns so as to command the line of the Rue St. Denis, the artillery-men would have been exposed, without any real object, to the fire of the houses in the street; and, moreover, no advantage could be gained by marching his column backwards and forwards in these narrow and barricaded streets. He, therefore, resolved to defer his movement to the Place du Châtelet, till the first battalion had returned from its patrol. A little beyond the Cour Batave, however, the officer commanding the first battalion was severely wounded, and his horse shot under him; the making of a temporary litter delayed its march, and it reached the Porte St. Denis with great difficulty. Here it halted for some hours, but, finding that the original line of retreat was cut off by numerous barricades, the officer in command decided on advancing straight forward through the Rue du Faubourg St. Denis and the external Boulevards to the Tuileries; in which he succeeded—but the column had lost twenty men killed and wounded in this demonstration. In the meanwhile, the other battalion had remained in the Marché des Innocens. At four o'clock, cartridges ran short, the first battalion did not return, the communication with the Tuileries was cut off, and barricades and crowds were growing more formidable on all sides. Its situation became very critical. The General's aide-de-camp offered to carry information of these circumstances to the Marshal, which he succeeded in doing, after having cut off his moustaches and disguised himself as one of the populace. Marmont had no reserve but a battalion of Swiss, and this was ordered to proceed at once to the Marché des Innocens; but, for want of a guide, it wandered at first in quite an opposite direction. Having, however, reached the Marché, *the two* battalions returned by the Rue St. Denis to the Place du Châtelet, and from thence along the quays, to the Quai de l'École, near the Louvre, where they took up a position.

IV. The fourth column proceeded along the quays of the Tuileries, Louvre, and l'École. At the Pont-Neuf, it found two battalions of the 15th regiment, which had been ordered to support it. The Guards, then, with one battalion of the 15th, crossed the Pont-Neuf, proceeded by the Quai de l'Horloge to the broad quay called Le Marché aux Fleurs, which lies between the two bridges Pont au Change and Pont Nôtre-Dame. The general officer commanding this column, decided on approaching the Place de Grève by the Pont Nôtre-Dame, which crosses the river a few hundred yards to the westward of the Place de Grève, and making a demonstration by the suspension-bridge which crosses directly to that Place. Two companies of the 15th were to remain on the Marché aux Fleurs, to observe the Rue de la Juiverie, which leads to the Pont Nôtre-Dame, whilst the rest of the battalion was to support the Guards.

The insurgents, who had collected in considerable force in the Place de Grève, advanced to occupy the Pont Nôtre-Dame, but were repulsed, and driven out of the Place de Grève; the fire from the houses was silenced, and a barricade, erected at the debouch of the Rue du Mouton on to the Place, was carried. The guns were placed in battery on the Place, and pointed towards the Quai de la Cité, and the entrance of the Pont de la Cité, which leads over into the Rue St. Louis de l'Isle; it was indeed all that could be done with them, for the height of the parapet wall of the quay prevented their being directed to any other point. Soon after, the force was joined by forty cuirassiers and the 50th regiment of the line; but, as the 15th and 50th had taken a perfectly neutral course, and the fire of the insurgents was getting hot, the General determined to occupy the Hôtel-de-Ville. The cavalry and artillery were marched into the stable-yard of the Hôtel, to protect them from the plunging fire which the insurgents kept up in perfect safety from the opposite bank of the river. Shortly after, a further reinforcement of two hundred Swiss reached them, the barricade of the Rue du Mouton, which had been re-occupied by the people, was retaken, and the light infantry of the Guards ordered to protect the suspension-bridge, left open by the neutrality of the 15th.

As the Hôtel-de-Ville was to be occupied, it became necessary to abandon the Place and its outposts, and limit the defence to the Hôtel alone. This edifice covers, as it were, an island, formed by the streets of La Tissanderie, Monceaux-St. Gervais, and La Martellerie. The windows giving on the Place and surrounding streets were occupied by sharpshooters of the Guards, cartridges were obtained from the Line, and, when all was ready, the Swiss and grenadiers of the Guards were withdrawn from the Place, and the barricade at the Rue du Mouton was confided to the light infantry of the Guards. This movement was mistaken by the insurgents for a retreat, and it was followed by a general attack; but they were unable to stand the heavy fire from the Hôtel, which also swept the back streets, and the mob gave way. Towards night, however, orders were received to retreat on to the Tuileries, which was effected at midnight by taking advantage of the streets being deserted; but the column had to carry away with it some fifty or sixty wounded.

At length, all the columns of the Guards which had been so strangely employed all the 28th, were re-assembled that night in the Tuileries; but with a loss of above three hundred killed and wounded. For forty-eight hours, they had not taken one moment's rest, and for thirty-six, there had been no issue of provisions of any kind. They had been promised some bread at day-break of the following day, but none was distributed, and all the exertions of the staff-officers on duty could procure nothing more than a quarter of a ration of bread per man, *and that* only for some battalions; this even was only obtained from the bakers in the neighbourhood, who had baked it for their private customers.*

The events of the 29th July, being so intermixed with political influences, and the total disaffection of the Line operating strongly in favour of the popular cause, cannot afford any very useful lesson as to street fighting; but, as an example of what should have been done on the 28th, we will take the events of the 13th Vendémiaire. The garrison of Paris, at that time, consisted of but five thousand troops, fifteen hundred patriots, and some fifteen hundred gendarmes, police, invalids, &c. The insurgents could bring forward about forty thousand well-armed men, but they possessed no artillery. The entire park was at the camp at Sablons; Bonaparte at once ordered the *chef d'escadron*, Murat, to bring it into Paris. With three hundred cavalry, this officer overtook a battalion which the insurgents had sent for a similar purpose, got in front of them, horsed the guns, and brought them to the Tuileries. Bonaparte posted his artillery and troops in the culs-de-sac of Dauphin, l'Echelle, Rohan, Saint Nicaise, on the bridges of the Pont-Neuf, Pont-Royal, Pont Louis XVI., on the Place Louis XV and of Vendôme, and, in fact, in every point by which the Convention was assailable. He formed a reserve with his cavalry and part of his infantry, which he posted in the Carrousel and garden of the Tuileries. He ordered all the provisions in Paris to be brought to the Tuileries, and established there a depot of ammunition and a hospital for the wounded; he intercepted the road to St. Germains, by which the enemy might have obtained artillery, and sent a detachment to occupy the depot of Meudon, with its heights, that the Convention might retire thither in case of defeat.

Aware of the moral influence which would be obtained by appearing to avoid hostilities, the troops had strict orders to keep on the defensive.

---

* Military Events of the late French Revolution, by a Staff Officer of the Guards. London: J. Murray, 1830.

The insurgents, numbering some twenty-five thousand, actually under arms, organized a system of attack. The sections of the Faubourg St. Germain were to leave the Odéon, and attack the Tuileries by the bridges; the sections of the right bank were to attack by the Rue St. Honoré and by all the transversal streets which cross from the Rue St. Honoré to the Tuileries; whilst a third portion was to take possession of the Pont-Neuf, so as to keep up the communication between the two attacking columns.

Bonaparte, determined to maintain his position, never for a moment allowed the various outrages committed by the insurgents in different parts of the capital to withdraw any portion of the troops from their posts, and the sections obtained peaceable possession of much of the provisions destined for the Tuileries, and of the Treasury. The detachment which occupied the Pont-Neuf, retired towards the Louvre, as soon as the enemy appeared to take possession of that bridge. It is true that the troops would have obtained great advantage in maintaining that position: but the moral effect of being on the defensive, and of allowing the inhabitants to look on the insurgents as the aggressors, was of too great an importance to be lost.

About half-past four, P. M., the people advanced to attack the Tuileries, having placed such young men as had served in the army, at the head of their columns. Bonaparte immediately rode to the detachment posted at the cul-de-sac Dauphin, which opened on to the church of St. Roch. The sectionists filled the Rue St. Honoré, and one of their best battalions was posted on the steps of the church, so as to bring a plunging fire to bear on the artillery-men. Bonaparte, bringing his guns at once into action, overwhelmed them with grape-shot. The people fell back before this tremendous fire; but, as they still kept up a musketry fire from the steps of the church, he ordered a company of patriots to storm the church, and, bringing his guns up to the Rue St. Honoré, he swept it both to the right and left. Leaving that detachment to finish the victory, he returned to the Carrousel. The insurrectionists of the Faubourg St. Germain, joined by some six thousand of those who had been driven back from the Rue St. Honoré, advanced in close column from the Pont-Neuf to the Pont-Royal, along the Quai Voltaire. Bonaparte, to receive them, placed several batteries along the Quai des Tuileries, which is parallel to the Quai Voltaire, and a battery to enfilade the Pont Royal. Allowing the insurgents to advance some distance on the bridge, he ordered all the guns to open fire. Taken in front, and in enfilade, death and terror soon pervaded their ranks. In vain their leaders tried to induce them to charge the battery at the debouch of the bridge; a fire renewed with fresh energy carried away numbers, until the remainder turned and fled.

At six o'clock, the engagement was over. A few insurgents having retrenched themselves on the Place Vendôme, in the church of St. Roch, and the Palais Royal, Bonaparte debouched his troops, by every issue from the Rue St. Honoré, and detached a corps which, leaving the Place Louis XV., crossed the Rue Royale, and advanced along the Boulevards. He thus swept the Place Vendôme, disengaged the church of St. Roch, invested the Palais-Royal, and blockaded it for the night.

On the morning, a few volleys caused it to be evacuated, and tranquillity was restored.

The 13th Vendémiaire is well worthy of attention, in many points of view,—the determination with which the troops withstood the temptation of becoming the assailants, in order to have the moral power of the conflict,—the manner in which they were concentrated and provisioned; for, whether in the field or in a town, the troops must be fed. Yet, in 1830, this point was totally overlooked. But if Bonaparte awaited the conflict patiently; once begun, it was vigorously opposed and put down; and, by bringing artillery to bear, he gave a strong support to his own small force, while he exposed it as little as possible. M. Thiers remarks, that the people should have opposed these manœuvres, by forming barricades in the streets communicating with the Tuileries, taking possession of the neighbouring houses, and thus enclosing the troops in their positions, and destroying them in detail.* But it was excessively unlikely that Bonaparte would have then remained idle; for, as we have seen, he had secured a retreat on to the depot of Meudon.

INSURRECTION OF CERTAIN CLASSES.

There are certain cases, however, in which it is necessary to attack the insurgents in their strongholds, either to prevent the germs of rebellion spreading further, or for the protection of property.

In such cases, lenity on the part of the government is always looked upon as timidity, and may often be productive of serious loss of life; for, what might have been arrested by a well-timed display of force, may take some days to overpower.

Force must, however, be opposed to force, and on no account should an armed population be allowed to have the advantage of defeating even a single company of soldiers; for, in the blindness of their ignorance, it would be looked upon as a decided victory, and the people would be rendered far more confident. If troops are not in sufficient number to arrest the movement, they should evacuate the town; but if they are, then every public building of importance should be occupied by detachments, each of them strong enough to defend itself against any odds; the insurgents are thus divided as much as possible, and hindered from acting together, and each division is successively attacked and overpowered.

---

* Thiers. Histoire de la Révolution Française, vol. vii.

During the insurrection at Lyons, in April, 1834, the troops received orders to avoid all narrow winding streets, to advance step by step, always to keep the length of one street between themselves and the insurgents, and to oppose force to force.

In 1848, the French government, having strong reason to suspect that attempts would be made to overturn it, by the Socialists, took every precaution to strengthen to the utmost the garrison of Paris.

On the morning of the 23rd June, however, the insurrection broke out; and, in the course of a few hours, the insurgents had taken possession of a segment of the town, of which the river, the canal St. Martin, and the rue and faubourg St. Denis, formed the three principal sides. The insurrection was, therefore, master of all the eastern part of Paris, from the Barrière St. Jacques to that of Montmartre; it likewise occupied the Place de Grève, and a part of the city. Advanced posts and secondary barricades had been erected, on one side of the river, as far as the upper part of the Faubourg Poissonière and the Rue Rochechouart, and on the other, as far as the Rue de la Harpe and the Place St. Michel. They had likewise entrenched themselves in the close of St. Lazare, whilst auxiliary points had been organized outside the walls, at Montmartre, La Chapelle, and Belleville. These positions commanding a number of *barrières*, their communication with the open country insured them every kind of facility for provisions.

The whole of this ground was a mass of barricades. All the streets leading to the principal thoroughfares, such as the Rue St. Denis and the Rue St. Jacques, were blocked up at the entrance; at the bridge of Austerlitz, on either side of the river, at the bridge St. Michel and that of Nôtre-Dame, formidable *têtes-de-pont* were erected; every street was barricaded from one end to another, and those of the *barrières* were defended by loopholes made in the wall on each side. Some of these barricades were very ingenious, cuttings being made across the street, communicating with the cellars of the houses on each side, so that, when stormed, the defenders could escape through the cellars; others were built with slopes, so as to cause the cannon balls to ricochet over them; and others in the form of a receding angle, where the shot would bury itself. Each of these barricades was well strengthened by a flank fire; and the windows of the houses, defended by loop-holed beams or woollen mattresses, were made use of for this purpose. These were the defensive preparations; but the plan was to march simultaneously forward by the right bank, on the Hôtel-de-Ville, the National Palace, the Chaussée-d'Antin and the Faubourg St. Honoré; by the centre on the Palais de Justice, the Louvre, the Bank, and the Mint; by the left bank, on the Luxembourg, the offices of the Ministry and the National Assembly, and thus form a junction at the western extremity of Paris.

General Cavaignac, having been invested with full powers by the National Assembly, divided Paris into three districts. General Lamoricière fixed his head-quarters at the Porte St. Denis, to attack on the left bank of the river; General Damesme had his head-quarters on the Place de la Sorbonne, and was to operate on the left bank; and General Bedeau, from the Hôtel-de-Ville, was to attack on the side of the Rue St. Antoine and the Petit-Pont, which would connect the operations of Generals Lamoricière and Damesme; whilst a strong reserve was stationed at the National Assembly. But to carry out this gigantic attack, Cavaignac had a force of upwards of fifty thousand men, exclusive of the National Guards; viz.,

The garrison of Paris	25,000	men.
Garde Mobile	15,000	„
Garde Républicaine	2500	„
Division of the Army of the Alps . .	10,000	„
Garrisons of St. Germains and Versailles .	4800	„
Total . .	57,000	„

For three whole days, this terrible conflict lasted from morning till night, and, in spite of the barricades being breached by artillery, of shells being thrown into the whole district, of the mine being brought into play, the troops could gain their ground but step by step; the insurgents, beaten from one stronghold, rapidly reaching another. Finally, on the fourth day, they were forced to retreat from all sides into the Rue du Faubourg Saint-Antoine, which offered a succession of very close barricades, almost all cannon proof from one end of the street to another, the cross streets, leading on one side toward the canal, and, on the other towards the Seine, being likewise barricaded.

At ten o'clock, a battery of mortars on the Place de la Bastille bombarded the Faubourg on that side; and, in a short time, a few shells had set fire to some of the nearest houses. A mine, also, pushed some considerable distance, threatened to blow up a considerable number of the insurgents, whilst their position was taken in flank by General Lamoricière. Perceiving the inevitable consequences of further opposition, they capitulated. To shew, however, how these barricades had been defended during the previous three days, it may be sufficient to state that, General Cavaignac having in person, with seven battalions, and artillery, attacked a barricade which had been constructed at the Temple, it was defended with such energy, that, after losing two-thirds of his gunners, he was obliged to obtain further reinforcements from General Lamoricière, before, at the end of three hours, the insurgents could be made to give up that position; and that, during the insurrection, the troops burnt 2,100,000 cartridges.

When engaging in street fighting, a general should—

1. Before adopting any plan, be perfectly aware of the amount of insurgents and their positions, so as to decide where to strike the decisive blow; for were he, from mere reports, to disseminate his troops on many points, he would run the risk of seeing them defeated in detail—a circumstance which occurred, on this occasion, to three companies of

the Line, who, through a mistake in carrying out their orders, found themselves in the Place Royale, without support, and were at once disarmed.

2. In order that troops may know what orders they are to execute, and have confidence in themselves, they must be in sufficient strength; and have the communication with head quarters kept open.

3. Night fighting should be avoided; for then it is not possible to see that the troops preserve proper discipline, or that they do not fall into an ambuscade; besides, they require rest.

4. Troops must be provisioned; and as it may, after the beginning of the conflict, be difficult to provide them with rations, they should be amply supplied before being marched off. The troops engaged in Paris, in 1848, fought with four days' rations on their backs.

Finally, no commanding officer should ever take the command of troops, to engage them, without having uncontrolled command over them, or allow himself to be interfered with by any one.*

OF RIOTS.

Troops are often called upon to aid the civil power in the suppression of riots, or to disperse unlawful assemblies; but in no country is it more requisite to have the certainty of the protection of the laws in putting down disturbances, than in England, and, therefore, troops should ever allow the first act of aggression to be on the part of the people, even though when called on by the civil power for assistance.

No officer is to go out with troops for the suppression of riots, the maintenance of the public peace, and the execution of the law, except upon the requisition of a magistrate, in writing. The magistrate is to accompany the troops, and the commanding officer is to remain near him. The troops are not, on any account, *to fire*, excepting *by word of command* of their officer, and the officer is not to give the command, unless distinctly required to do so by the magistrate.*

---

* General Cavaignac's speech in the *Moniteur*, November, 1848.

The following opinions given by the Attorney-General in 1801, Lord Chief Justice Tindal in 1832, and Mr. Justice Holroyd in 1834, will clearly elucidate the relative position of citizen and soldier in England, in case of a riot:—

"In case of any sudden riot, *any* of His Majesty's subjects, without the presence of a Peace Officer of any description, *may arm themselves*, and of course may use *ordinary means of force* to suppress such riot and disturbance.

"And what His Majesty's subjects *may* do, they also *ought* to do, for the suppression of Public Tumult, when an exigency may require that such means be resorted to.

"Whatever *any other class* of His Majesty's subjects may allowably do in this particular, the military may unquestionably also do.

"By the Common Law, every description of Peace Officer may, and ought to, do not only that which in him lies towards the suppressing of riots, but may, and ought to, command *all other persons* to assist therein.

"However, it is by all means advisable to procure a Justice of Peace to attend, *and for the military to act under his immediate orders*, when such attendance, and the sanction of such orders can be obtained, as it not only prevents any disposition to unnecessary violence on the part of those who act in repelling the tumult, but it induces also, from the known authority of such Magistrates, a more ready submission on the part of the Rioters, to the measures used for that purpose;—but still in cases of *great and sudden emergency, the military, as well as all other individuals, may act without their presence*, or without the presence of any other Peace Officer whatsoever." †

---

* H.M. Regulations for the Army, p. 209.

† Ibid. p. 208.

Lord Chief Justice Tindal, in a charge which he delivered in 1832, stated—

"And whilst I am stating the obligation imposed by the law on every subject of the realm, I wish to observe, that the law acknowledges no distinction in this respect between the soldier and the private individual. The soldier is still a citizen, lying under the same obligation, and invested with the same authority, to preserve the peace of the King, as any other subject. If the one is bound to attend the call of the civil magistrate, so also is the soldier; if the one may interfere for that purpose when the occasion demands it, without the requisition of the magistrate, so may the other too; if the one may employ arms for that purpose, where arms are necessary, the soldier may do the same. Undoubtedly, the same exercise of the discretion, which requires the private subject to act in subordination to and in aid of the magistrate, rather than upon his own authority, before recourse is had to arms, ought to operate in a still stronger degree with a military force. But, where the danger is pressing and immediate; where a felony has actually been committed, or cannot otherwise be prevented; and, from the circumstances of the case, no opportunity is offered of obtaining a requisition from the proper authorities,—the military subjects of the King, like his civil subjects, not only may, but are bound to, do their utmost, of their own authority, to prevent the perpetration of outrage, to put down riot and tumult, and to preserve the lives and property of the people."

With respect to actual collision between the military and a mob, Mr. Justice Holroyd observed, respecting an action brought against some members of the Yeomanry for injuries inflicted during the Peterloo Riots—

"If there were the cavalry and soldiers on one side, and the mob on the other, then the act of one man in the mob, would be the act of all, if the mob were at that time acting illegally; and if *any one of them* began his attack upon the military before there was a prior attack by the military, then the military would be at liberty to proceed in their own defence against all those persons who were acting in concert with the individual by whom the military were at first opposed." *

Therefore, if firing should unfortunately be necessary, and should be ordered by the magistrate, officers and soldiers must feel that they have a serious duty to perform, and they must perform it with coolness and steadiness; they must therefore not fire over the heads of the mob, by which, perhaps, innocent people would be wounded, and the guilty escape, but at the mob, and the officer in command must use a humane discretion respecting the extent of the line of fire, and order it to cease when no longer necessary, whether the magistrate may order the cessation or not.†

---

* The Law relating to Riots and Unlawful Assemblies, &c., by E. Wise, Barrister-at-law.

† H.M. Regulations for the Army, pp. 209, 210.

INDEX.

Page
ADJUTANT-General, duties of 143
Advance-Guard, nature of an 155, 234, 275
  precautions to be taken by an 301, 362
  should be avoided when attacking cantonments 348
  surprize of an 317
Advance piquets 239
  posts 235
  — duty of 245
  — patrols on 246
Affghanistan, commissariat supplies in 150
Air, resistance of the, on projectiles 66
Aira, ambuscade at . . . 313
Alarm-posts in cantonments 328
Alba, duke of, improves the cavalry of XVI century . 46
Albertus Magnus 39
Albuera, battle of 79
  French formation at . . 80
  — artillery at . . . 117
Almaraz, ford at 382
Altenburg, surprize of . . 340
Ambuscades . . 285, 298, 308
Ammunition, calculation of 9
  should be used sparingly 114
Anglet, village of 86
Araktcheiew, General, establishes military colonies in Russia 28
Armies, how provided . . 149
  organization of . . . 1
  Prussian and Russian . 12
  their state in the XVIII century 48
  war organization of . . 14
Army, first standing . . . 20
  in England 21

Page
Arroyo-Molinos, surprize of 334
Arsenals, should be protected 12
  Austrian 14
  French 13
  British 17
  Prussian 15
  Russian 15
  Sardinian 16
  Spanish 16
Artillery, Austrian . . . 134
  Bavarian 129
  British 8, 106, 131
  defending infantry squares 116
  difficulty of transporting 118
  Dutch 8, 132
  early knowledge of . . 40
  French 8, 128
    greatly increased in the French Revolutionary armies 53
  horse 107, 115, 117
  — when first tried . . 50
  improved by Gustavus Adolphus 42
  — — Louis XIV. . 50
  in a retreat 117
  organization of . 3, 7, 106, 145
  passage of rivers by . 120, 293
  positions to be occupied by 110, 112, 170
  proportion in the field . 9
  Prussian 8, 133
  Report of Select Committee on 9
  Russian 8, 133
  Sardinian 8
  should be well horsed, 8, 11, 107, 119
  Spanish 131
  strength of a company . 8

Page

- Artillery, tables shewing the gradual progress of . . 58
  - tactics 111
  - when first placed on wheel carriages . . . 42
  - with detachments . . . 292
  - Wurtemburg 7, 132
- Attack, system of 37
- Attorney-General, the, on riots 419
- Austrian military frontier, system of 23

- BACON, Roger 39
- Barosa, battle of 164
- Barrel, musket, theory of the length of a 65
  - of the breech of a . . 67
  - of the form of a . . . 67
- Battalion, of the 73
- Battery, foot-field 107
  - horse-field 108
  - mountain 109
  - nature of a 106
  - of reserve 116
- Battle, order of 168, 171
  - preparations previous to a 162
- Bautzen, Ney's march on, 172, 303
- Bayonet, fence 82
  - invention of the . . . 45
- Beauharnais, Prince Eugene, his cantonments behind the Saale 327
- Belliard, General, in command of an advance-guard 296
- Beningsen attempts to surprize Ney 345
- Bidassoa, battle of the . . 238
- Birmingham, manufacture of small-arms at . . . 18
- Bivouac, of the 390
- Bladensburg, battle of . . 221
- Bridges, boat 226
  - erection of 223
  - how to destroy 232
  - reconnoissance of . . . 380
- Brigades, formation of . . 144
- Bullets, belted 62
  - conical 69

- CAMP, reconnoissance of a . 257
- Canals, reconnoissance of . 383
- Cannon, introduction of . . 40

Page

- Cantonments, attack of . . 339
  - definition of 324
  - reconnoissance of . . . 387
- Castrametation, of 389
- Caubul cantonments . . 325, 336
  - Commissariat supplies at, 152
  - retreat from 176
- Cavalry advancing through defiles . . . 276, 288, 296
  - ambuscades 311
  - Austrian 5, 90, 248
  - British 4, 6
  - charge of . . . 98, 102, 307
  - combined with infantry. 167, 305
  - deficiency of, in the British service 62
  - exhausted in France by Napoleon 57
  - formation of, for attack, 90, 101, 295
  - French 6
  - furnished with lassos, for artillery draught . 8
  - heavy 88
  - improved by Napoleon 56
  - influences the course of a war 89
  - instruction of 38
  - light . . . 4, 88, 253, 325
  - officer, requisites for an, 95, 100
  - organization of 3, 37
  - positions occupied by, 97, 100, 169, 327
  - proportion of, to the other services . . . 6, 7
  - Prussian 6
  - pursuits by 94
  - Russian . . . 5, 89, 95, 248
- Cavaignac, General, on street fighting 402, 417
- Charles, Archduke, on cavalry formations 169
- Chateau-Thierry, cavalry action at 94
- Chenaub, passage of the . . 383
- Ciudad-Rodrigo, British retreat to 146
- Cloissons, of 196
- Clover, of 353
- Column, the infantry . 78, 85
  - on the march 156
- Commissariat, duty of the, 149, 347, 352
  - supplies in Affghanistan . 150
  - — in Portugal . . 147

Page

- Communication, lines of . . 137
  - reconnoissance of . . . 375
- Companies, defects of picked 146
- Condé at Rocroi 102
- Congreve, General, improves artillery in England . 58
- Constabulary in Ireland . . 12
- Convoy, artillery 118
  - attack of a 369
  - draught 359
  - escort 360
  - march of a 361
  - parking of a 363
- Corbineau, General, at Culm 305
- Cordons, system of . . . 208
- Corps-d'armée, formation of, 12, 145
- Cossacks, the 89, 248
- Croix d'Orade, action at the bridge of 300
- Cuirassiers introduced by Napoleon 56
- Culverins 42

- DANIA, Captain 259
- Decker, Colonel, at Eylau . 114
- Defile, definition of a . . . 278
  - mountain 197
  - precautions to be taken previous to entering a, 277, 362
- Delvigne's improvements in the rifle 69
- Depots, of 2
- Detachments, on 274
  - engagements of . . . 294
- Distances, calculating . . 289
- Divisions, formation of . . 144
- Douro, passage of the . . . 242
- Dragoons, institution of . . 47
  - their present use . 88, 104
- Dresden, as a centre of operations 143
  - battle of 166
- Dreyse's needle gun . . . 71

- ECHIQUIER, danger of infantry formation in . . 11
- Edward III., cannon in time of 41
- Elphinstone, Mr. Mountstuart, on the Affghan *campaign* 150

Page

- Engagement, reconnoitering previous to an . . . 269
- Engineers, proportion of that corps in the field . . 11
- Essling, reconnoissance previous to the battle of . 271
- Excelmans, General, surprizes the Prussians near Versailles . . . 318

- FIRE-ARMS, theory of . . . 62
- Firing, systems of 73
- Flank-march 158
  - how protected 306
  - how reconnoitered . . . 267
- Flying-bridge 227
- Fontenoy, tactics at . . . 168
- Foot-paths, reconnoissance of 377
- Forage, dry 348
  - green 352
  - rations of 349
- Foragers 346
  - attack of 355
  - escort of 354
- Fords 231, 380
- Forests, reconnoissance of . 383
- Forts in mountains . . . 201
- Foulness, of, in barrels . . 65
- Foy, General, at Salamanca. 80
- Francs-archers, institution of 20
- Frederic the Great, his system of warfare . . . 49
  - introduces horse-artillery 50
- Frederic the Great at Leignitz 247
- Frimont, Baron de 301
- Fuente de Cantos, action of 295

- GENDARMERIE, corps of . . 11
- Germanic confederation . . 32
- Grain, weight of 349
- Gravity, force of, on projectiles 66
- Grenadier companies . . 23, 62
- Gribauval's system of artillery 54, 60
- Guerillas, of 332
- Gunpowder, when discovered 38
  - chemical action of . . 64
- Guns, brass and iron . . . 17
  - leather 42
  - price of 17
  - principles on which constructed 106

Page
Gustavus-Adolphus improves artillery 42

HARQUEBUSS, the 43
Harquebussier, the 45
Hay, of 349, 353
Haynau, surprize of 99
Hedges, use of 386
Helwig, Lieutenant 370
Hems, siege of 40
Hochkirch, surprize of 244
Hohenlinden 157
Hohenlohe, Prince of 263
Holroyd, Mr. Justice, on riots 421
Horses, breed of, 23, 25, 26, 28, 32
  price of 26, 32
  proportion of, in the cavalry 4
  should be carefully broke 3
Houses, isolated 200, 388
Hungary, the *Insurrection* in 22

ICE, destroyed by cannon 232
Infantry, ambuscades 311
  arms of the 62
  British 62
  charged by cavalry 103
  combined with cavalry 167, 305
  formation of 73, 75, 83
  manœuvres of, in XVII century 44
  organization of 7, 62
  position of, in cantonments 327
  tactics 61
Islands, reconnoissance of 378

JOMINI on cavalry 170

KELLERMANN, General, at Marengo 103
Key of a position 171
Khybur Pass, passage of the 278
Kollin, battle of 97
Krauchenberg, Captain 297

LA COURBE on mountain warfare 216
Lakes, reconnoissance of 385

Page
Lance of fifteenth century 45
  when discontinued 47
Lannes, Marshal, at Friesland 162
Lasalle, General, on cavalry 99
Lefebvre-Desnouettes, General 301
Lepell, Mary 49
Levies, new, their instruction, 2
  irregular, cannot be depended on 21
Leuthen, artillery at 112
  flank march at 158
Line, infantry deployed in 76
  distance of second line in cavalry 101
Lines of communication 138
  of operation 138
  strategical 137
Lloyd, General 261
Lock, match 43
  musket 44
  needle-gun 71
  pyrite-wheel 43
Lodi, battle of 222
Lodgment, forming a 225
Lowositz, cavalry action at 169
Lutzen, battle of, unexpected by the French 164
  scarcity of ammunition at the 115
Luzzara, battle of 291
Lyons, system of street-fighting at 418

MACDONALD'S passage of the Splugen 121
Magistrate to be present at the distribution of forage 352
  at all riots 418
Main-guards, duties of 243
  in cantonments 328
Man-at-arms, the 45
March, length of a 153
  rules to be observed on a 157
Marches, flank 158, 306
  night, dangerous 287
  science of 158
  strategical 155
Maritz, guns cast solid by, *note* 54
Marmont, Marshal 404
Marne, passage of the 224

Page
Marshes, reconnoissance of . 384
Maquilla, cavalry action at . 95
Mayen, redoubt of 196
Meeánee, battle of 36
Melfort, Count Drummond de 49
Minié, Captain, improves the rifle 70
Mojaick, action of 82
Moreau's passage of the Rhine, 1800 220
Mountain warfare 100
  country, nature of . 193, 201
Mountains, reconnoissance of 193, 385
Musket, the 44
  practice, experiments on 68
Musketeers 44

Napoleon introduces a new system of warfare . . 56
  on artillery . . . 105, 115
  on boat equipages . . . 219
  on tents 390
  on the 13th of Vendémiaire 411
  Prince Louis, on artillery 105
Napoleon's passage of the Alps 120
  passage of the Po . . . 220
  march to Ulm 159
Neresheim, details of the battle of 176
Ney, Marshal, his march on Bautzen . . . 172, 303
  retreat from Russia . . 174
Nivelles, defence of redoubts at 200
Nucleus of troops 2, 4
  of staffs 1

Operation, base of . 136, 138
  centre of 143
  lines of 137
Optical illusions 291
Oudinot, General, pursuit of Austrians 154
  Lieutenant-General, on the studs of Algeria . 26
Outposts, duty of 241
  in cantonments 331
  placing the 237
  surprize of 316

Page
Pacthod, General 366
Pakenham, General, at Salamanca 77
Pampeluna as a strategical position 135
Pancorbo, defile of 288
Paris, insurrections in, 403, 411, 414
Partisans, of 319
Passarge, French cantonments in the 326
Pasture-ground, produce of. 351
Pelet, General 74, 271
Pensioners, organization of . 31
Pensions of British soldiers 31
Pikemen 44
Pile-bridges 226
Piquets 236, 328, 331
Polytechnique, École . . 13, 25
Ponte-Nova, bridge of . . 229
Pontoise, siege of 42
Pontooniers 11
Pontoons 227
Positions, choice of . . . 165
  in mountain warfare . . 204
  key of 171
  moral influence of . . . 136
  nature of 165
  reconnoissance of . . . 389
  strategical 135
  to be occupied by artillery 110, 112, 170
  by cavalry . 97, 100, 169, 327
Powder chemically considered 63
  mills . . . 13, 14, 15, 16, 18
Prague, battle of 173
Pursuit, of a 175, 303
Pyrenees, operations of 1814 in the 191, 207

Quartermaster General, duties of . . . 143, 328

Rafts 228
Ramnugur, action of . . . 272
Range, definition of . . . 67
Ravines, reconnoissance of . 198
Rear-guard, commander of a 174
  duties of a 282, 304
  nature of a 156
Recoil of fire-arms 63
Reconnoissance in general . 374
  offensive 270

Page
Reconnoissance secret . . 250
Reconnoitering the enemy . 250
Recruiting 5, 21
  in Austria 22
  in Bavaria 28
  in France 24, 52
  in Great Britain 30
  in Prussia 26
  in Russia 28
  in Sweden 30
  in Wurtemburg 28
Recruits, of 2, 3
Reichenberg, tactics at . . 168
Reiters, the 46
Reserves . . . 76, 91, 113, 171
Retreat, of a 173, 263
Retrenchments, attack of, 80, 200
Richepanse, General . . . 303
Rifles, when required . . . 62
  the British 62
  Delvigne's 69
  Minié's 70
  Needle 71
  Thouvenin's 69
Riots, law respecting . . . 418
Rivers, defence of 230
  points of passage on . . 221
  reconnoissance of 198,276,378
Roads, mountain, nature of, 196
  reconnoissance of . . . 375
Rohan, Duc de, quoted . . 215
Rolica, deficiencies of cavalry at 62
Ross, Sir H. D., at Nivelles . 108
Roveredo, battle of . . . 176
Russian military colonies . 28

SAINT Jean-de-Luz, bridge of 233
Schreckenstein, General, on street fighting . . . 403
Salamanca, tactics at . 77, 80, 173
Saltpetre, price of, in Great Britain 19
San Estevan, Soult's position at 211
Schools, military 13, 14, 15, 16, 19
  regimental 14
Schwartz, Berthold . . . 40
Schweidnitz as a strategical position 136
Scinde, operations in . . . 138
Seven years' war, effect of the 51

Page
Skirmishers, when introduced 52
  firing of 75
  use of 75
  system of attack of . . 81
  of defence against cavalry 82
Small arms, manufactories of, 12, 14, 15, 16, 18
  price of, in England . . 18
Smolensko, Russian retreat on to 157
Squadrons, organization of . 4
Square, infantry 83
Staffs, of 1
Stewart, General William, at Albuera 79
Strategical combinations, 138, 140
  lines 137
  marches 155
  positions 135
Strategy, of 135
Straw, of 349
  bridges over ice made with 230
Streams, reconnoissance of . 379
Street fighting, on 394
Sulphur, price of, in Great Britain 19
Supplies for an army . 138, 146
  detachments 286
  in cantonments 333
Suwarrow's manœuvre against the French in 1798 . . 159
Switzerland, nature of country 216

TACTICAL marches 157
Tactics, of artillery . . . 105
  of cavalry 87
  definition of 36
  infantry 61
  sketch of, since the invention of gunpowder . 38
  in the British service . . 58
Talavera, cavalry at . . . 98
Tamisier's improvement in the rifle 69
Tarifa, siege of 401
Thiébault, General, on supplies 153
Thouvenin's improvements on the rifle 69
Tindal, Chief Justice, on riots 420
Tordesillas, bridge of . . . 229

Page
Torre la Vega, surprize of . 341
Torres Vedras, lines of . . 139
Tortosa, siege of 372
Toulouse, battle of . . . 78
Towns, defence of open . . 394
  attack of open 396
Trajectory theory, of the . 67
Trestle-bridges 226
Turenne at Marienthal . . 135
  at Turkheim 325

Ulm, Napoleon's march upon 159

Valleys, in mountain warfare 295
  reconnoissance of . . . 199
Vallière's, De, system of artillery 53, 60
Valteline, warfare in the . . 215
Vauban introduces the firelock and bayonet . . 45
Vedettes 239, 241
Vendémiaire, the 13th . . 411
Villages, defence of . . 85, 200
  precautions to be taken by detachments previous to entering . . 255
  reconnoissance of . . . 387
Vimeiro, deficiency of cavalry at 62
Volunteer corps . . . 90, 322

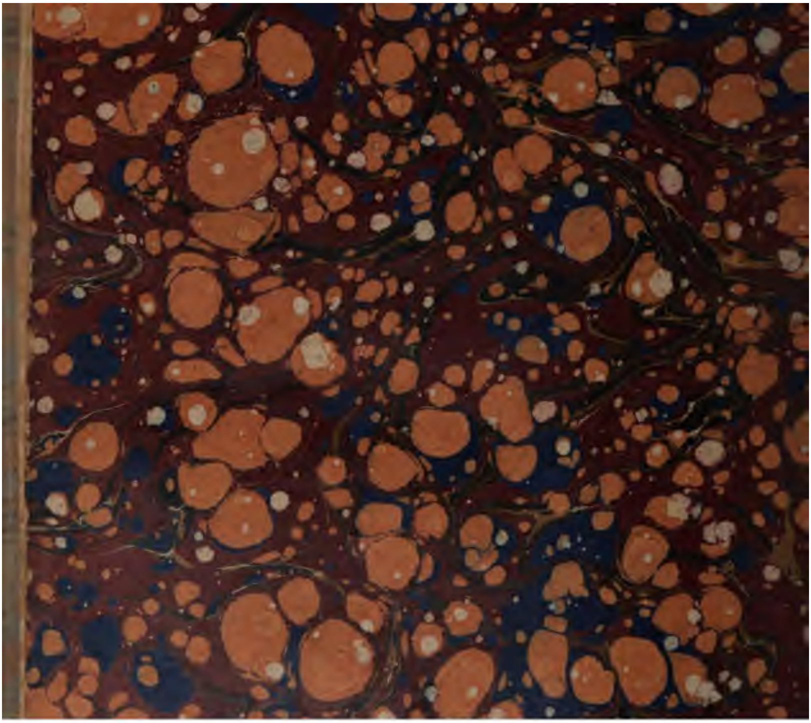
Page
Wachau, battle of . . . 92
Wagram, artillery at the battle of 109
  details of the battle . . 122
Warfare, mountain . . . 190
  system of 37
  introduced by Frederic the Great 55
  by French Revolution . 52
  by Napoleon 56
Waterloo, ammunition expended at 115
  British tactics at 37
  retreat on to 173
Weapons, uniformity in, requisite 5
Wellington, Duke of, on artillery 9
  on reconnoissances . . . 392
  on street fighting . . . 402
Wilhelms, the commandant 302
Windage, theory of . . . 65
Wurzburg, battle of . . . 101

Yeomanry, value of . . . 32

Zaragossa, siege of . . . 397
Zirknitzer-see, the . . . 385
Zubiri, position of . . . 209
Zurita, siege of 41

THE END.

BRADBURY AND EVANS, PRINTERS, WHITEFRIARS.



U 102 .J57 C.1
Manual of field operations.
Stanford University Librari
3 6105 036 679

U
102
.J57

STANFORD UNIVERSITY LIBRARIES
CECIL H. GREEN LIBRARY
STANFORD, CALIFORNIA 94305-6004
(415) 723-1493

All books may be recalled after 7 days

DATE DUE

F/S JUN 30 1996

MAY 3 1

JUN 0 9 2003

JUN 0 2 2003